WANG

VS/OIS

Printer Services
Reference Guide

VS/OIS

Printer Services
Reference Guide

Disclaimer of Warranties and Limitation of Liabilities

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HOW TO USE THIS GUIDE

OVERVIEW

The *VS/OIS Printer Services Reference Guide* is designed for VS and OIS system administrators, supervisors, and system users. Administrators and supervisors should be familiar with the VS and OIS systems operations, software installation, and system configuration; users should be familiar with prnting functions of each application. The book contains three major sections that provide users with the information they need to administer and use the peripheral software for WP Plus, VS IIS and OIS WP applications, and DP printing.

The *VS/OIS Printer Services Reference Guide* is a compilation of material found in the *LCS15 Software User's Guide* (now obsolete), the *Printing Software Administration Guide*, as well as material taken from various Customer Software Release Notices to create a single, inclusive reference document.

HOW THIS GUIDE IS ORGANIZED

The guide provides material for three separate peripheral software packages: WP Plus, VS/IIS, and OIS WP, and DP.

It is organized in three sections. These sections have the following characteristics:

- Each section deals with only one peripheral software package.
- Each section is self-contained and includes its own table of contents and index.
- Each section contains five similar chapters — each chapter includes information that applies only to that peripheral software package.
- Each section is printed with a blue color bar in the right margin on all odd numbered pages to help you identify the pages that belong in that section.

The guide is organized in the following way:

- The first part of this guide, the introduction, outlines the contents of the three main sections and the seven appendixes.

- Following the introduction are three major sections:

  Section One — VS and OIS WP Plus Peripheral Software
  Section Two — VS/IIS and OIS WP Peripherals Software
  Section Three — VS DP Peripheral Software

- Each section consists of five similar chapters:

  Chapter 1 — An overview of the section
  Chapter 2 — Description of the software features
  Chapter 3 — List of special conditions and restrictions
  Chapter 4 — Procedures to run the utilities
  Chapter 5 — PostScript and LaserJet printer functionality

- Finally, the last part of this guide contains seven appendixes:

  Appendix A — Formatting With Proportional Space Fonts
  Appendix B — Hex Codes and Character Set Tables
  Appendix C — Paper Size Specifications
  Appendix D — LDP8 Font Cartridges
  Appendix E — Error Messages
  Appendix F — LCS15 Typographic Font Samples
  Appendix G — Wang Printers and Accessories

SUGGESTION

If you are using only one section of this reference guide, you may want to remove that one section (along with the appendixes). All the information for the peripherals software package is contained within that section, including a table of contents and an index. Also, the index contains references to the appendixes that pertain to that section.

CONVENTIONS

To help you locate procedures easily, they are presented in the following two-part format:

Procedure — This part presents the steps you use to perform the procedure.

Remarks — This part presents any additional information about the procedure. Some procedures may not require this part.

POSTSCRIPT AND LASERJET TERMINOLOGY

The terms PostScript and LaserJet are used at times to identify types of printers. When PostScript is used to identify a printer, it is referring to the LCS15 printer, and LaserJet is referring to the LDP8 printer.

ASSOCIATED DOCUMENTATION

Associated documents are presented for each of the peripheral software packages.

Related WP Plus Documents

For further information on WP Plus, refer to the following documents:

- *VS WP Plus Peripherals Release 3.0 CSRN* (715-1922)
- *WP Plus Reference Guide* (700-8615)
- *WP Plus Quick Reference Guide* (700-8616)
- *WP Plus Administrator's Guide* (700-8617)
- *WP Plus Installation Guide* (715-0716)
- *WP Plus Performance and Configuration Guide For The VS* (715-2346)

Related Word Processing Documentation

For more information on the word processing applications, refer to the following documents:

- *VS/IIS Peripherals Release 7.20 CSRN* (715-2466)
- *Word Processing Reference Manual* (700-7611)

Related VS DP Documentation

For information on VS DP, refer to the following documents:

- *VS System Administrator's Reference* (800-0420)
- *VS Programmer's Introduction Manual* (800-1101-06)
- *VS System Operator's Guide* (715-0418)
- *The Wang Professional Computer PC 200/300 Redirection Operations Guide* (715-1610)

Related OIS Documentation

For more information on OIS system administration, refer to the following documents:

- *OIS System Administrator's Guide* (700-5562)
- *OIS Software Installation Guide* (715-0634)

Related CHARTER Documents

For futher information on CHARTER, refer to the following documents:

- *Graphics Introducing Wang CHARTER Manual* (700-7727A)
- *Wang CHARTER Sample Graph Selection Guide* (700-8691)
- *Graphics Wang CHARTER Reference Manual* (700-1447A)
- *VS Graphics Facility User Reference Manual Vol. 1 (Basic Functions)* (800-1448)
- *VS Wang 20/20 User's Guide* (715-0307)

Related IMAGE Documents

For further information on IMAGE, refer to the following documents:

- *PIC Image Processing User's Guide* (715-0472)
- *The Wang Professional Computer Terminal Emulation Guide* (700-8035)
- *The Wang Professional Computer PIC File Server User's Guide* (715-0229)
- *VS Wang Integrated Image Systems (WISS) Capture System* (715-1113)
- *VS Wang Integrated Image Systems (WISS) Administrator's Reference* (715-0873)

PostScript Documentation

- *PostScript Language Reference Manual and Supplement* (714-0791)

- *PostScript Language Tutorial and Cookbook.* Adobe Systems Incorporated. Palo Alto, California: Addison-Wesley Publishing Co., Inc., 1986.

- *PostScript Language Reference Manual.* Adobe Systems Incorporated. Palo Alto, California: Addison-Wesley Publishing Co., Inc., 1986.

Related Printer Documents

For further information on specific printer operations, refer to the following documents:

- *Model 6581W Daisy Printer User Manual* (700-5176)
- *Model 6581W Daisy Printer Procedures Summary Card* (700-5257)
- *Model 6581WC Wide Carriage Printer User Manual* (700-5138)
- *Model 5581 WD Twin-Head Daisy Printer User Manual* (700-5588)
- *Model DW/OS-55 Daisy Printer User Manual* (700-8095)
- *PM019 User's Manual* (715-0335)
- *PM015 Daisy Printer User Manual* (715-0430)
- *OIS-PTR20 Daisy Printer User Manual* (700-7073)
- *DW/OS-60 User's Manual* (715-0231)
- *5577 High-Density Matrix Printer User Manual* (700-7125)
- *Wang Model 5578 Multi-Functional Color Matrix Printer User Manual* (715-1850)
- *Wang LM400/700/900 Series Shuttle Matrix Printer Installation and User's Guide* (715-1256)
- *LIS-12 User's Guide* (700-9037)
- *OIS-PTR20 Daisy Printer User Manual* (700-8314)
- *LIS-24 Laser Imaging System User Guide* (715-0443)
- *LPS-12 Laser Printer System User Manual* (700-7198)
- *5574-1 Band Printer User Manual* (700-8763)
- *Model 5521 Line Printer User Manual* (700-4327)
- *Model 5541W Daisy Printer User Manual* (700-4790)
- *WP 5541WC Wide Carriage Printer User Manual* (700-4789)

- *Model LCS15 Printer User's Manual* (715-0556)
- *Wang Model LDP8-SYS Laser Printer User's Manual* (715-1543)
- *Wang Model LDP8-SYS Laser Printer Installation Instructions* (715-1936)
- *Model 5533/5535 Bidirectional Matrix Printer User Manual* (700-6594)
- *OIS Model 5574 Band Printer User Manual* (700-6878)
- *Wang Model LPS8 Laser Printing System User's Guide* (715-0326)

Printer Accessory Documentation

For further information on printer accessories, refer to the following documents:

- *Model DSF-55 Dual Sheet Feeder User Manual* (700-8605)
- *DSF-77 Dual Sheet Feeder User Manual* (700-8690)
- *Model DW/OS-60 Dual Sheet and Envelope Feeder Installation and User Guide* (715-0249)
- *Model SSF-40 Single-Sheet Feeder Installation and Operation Instructions* (715-0451)
- *Model SSF-20 Single-Sheet Feeder User Manual* (700-8699)
- *WP Twin Sheet Feeder User Manual* (700-4664)
- *Wang Professional Computer Integrated Word Processing Reference Guide* (715-0179A)
- *Envelope Feeder User Manual* (700-6252)
- *Model ET-1 Envelope Tray Summary Card* (700-0015)

INTRODUCTION

The *VS/OIS Printer Services Reference Guide* provides you with the information you need to administer the peripherals software for the VS and OIS systems.

This chapter provides an introduction to the major sections and to the material found in the appendixes.

This book is divided into three sections:

Section I — Describes the features, restrictions and special considerations, utilities, and printing of documents on PostScript and LaserJet printers for WP Plus.

Section II — Describes the features, restrictions and special considerations, utilities, and printing of documents on PostScript and LaserJet printers for VS/IIS.

Section III — Describes the features, restrictions and special considerations, utilities, and printing of documents on PostScript and LaserJet printers for Data Processing (DP).

CHAPTER CONTENTS

Each section contains five similar chapters presenting the following information.

Chapter 1 — Provides an overview to each section and outlines the steps that you should follow to get printers up and running. Read this section if you are installing peripheral software for the first time. This chapter also refers you to the appropriate location, either in this guide or another reference guide, for the steps required for installation and configuration.

Chapter 2 — Lists the printing features that each application supports and the types of files that can be printed using each application. Refer to this chapter for a description of the application that each printer supports.

Chapter 3 — Describes the special conditions and restrictions that exist for printers when you use the peripheral software. The printers are grouped according to type (line, daisy, matrix, and laser) and each condition or restriction is listed with an identifying title to make it easier to locate. Review the conditions and restrictions listed for your printer.

Chapter 4 — Contains the procedures you use to run the peripheral utilities. You use utilities when you first install the peripherals software and again any time you add fonts or change printer parameters. Refer to this chapter whenever you need to run peripheral utilities.

Chapter 5 — Explains how the PostScript and LaserJet printers function with each application. Read this chapter if you are using either an LCS15 or an LDP8 printer.

APPENDIX CONTENTS

The appendixes A through G contain the following information:

Appendix A — Describes how proportional spaced fonts print differently than the more familiar typewriter (monospaced) fonts. Refer to this appendix before you use typographic or proportionally spaced (PS) typewriter fonts.

Appendix B — Contains the hex codes for daisy print wheels, Wang printer keyboard characters, LDP8 typographic fonts, and the encodings for LCS15 typographic fonts. Refer to this appendix if you want to alter a font through Font utilities or modify a translation table through the FONTCNTL utility.

Appendix C — Contains the paper size specifications for all Wang printers. Refer to these tables when you need information such as, number of characters per line, number of lines per page, and page length menu entries for specific paper sizes.

Appendix D — Contains tables that list the cartridges and fonts available for the LDP8 printer. Refer to these tables when you are using the font cartridges for LDP8 printer.

Appendix E — Contains error messages that may occur when you are using utilities for WP Plus, VS/IIS, and DP.

Appendix F — Contains samples of typographic fonts. Refer to this chapter for samples of how typographic fonts appear when printed in a document.

Appendix G — Contains tables that list the Wang printers, the applications and features they support, and the printer accessories available.

Section I

VS and OIS WP Plus Peripherals Software

Introduction to VS and OIS WP Plus Peripherals Software

WP Plus Peripherals Software Printing Features

Special Conditions and Restrictions for WP Plus Peripherals

WP Plus Peripheral Utilities

Using WP Plus With PostScript and LaserJet Printers

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Chapter 1
INTRODUCTION TO VS AND OIS WP PLUS PERIPHERALS SOFTWARE

OVERVIEW

Section I contains information that you need to run peripherals software in order to print WP Plus documents on the VS and OIS.

The chapters in this section contain the following material:

Chapter 1 — Provides an overview of the contents of this section and a section that outlines the steps you follow in order to connect the printers to your system.

Chapter 2 — Lists the features that are supported on each printer and the types of files that can be printed using WP Plus Peripheral software.

Chapter 3 — Presents the special considerations that you should be aware of when you use the printers and utilities.

Chapter 4 — Describes the procedures you need to follow in order to run the WP Plus utilities.

Chapter 5 — Presents the features of the PostScript and LaserJet printers.

GETTING STARTED

The peripherals software controls your printers. Before you can print from a printer that is connected to your system, you have to ensure that the peripherals software is installed and configured properly.

This section presents the steps you perform to get the printers running, and refers you to the chapters in this section and in other appropriate documents that contain the required procedures.

The following list contains the procedures you perform to get the printers up and running:

- Install the Peripherals Software packages
- Install additional fonts
- Configure printers if new installation or new printer (VS only)

- Run any necessary WP Plus utilities
- Assign print routes (if new installation or new printer)
- Send an initial print job (necessary to access font index)
- Assign fonts

Installation of the Peripherals Software Packages

To install the VS WP Plus peripherals software package, you should perform the following procedures:

- Install the Peripherals Software Package
- Run the SECUREP Procedure
- Install the Additional Fonts
- Run WP Plus utilities

These procedures are included in the CSRN that accompanies the peripherals software.

To install the OIS peripheral software package, you should install the following software:

- Peripherals System Software
- Peripherals Software
- Peripherals Utilities
- Additional Fonts

The instructions for installing this software are included in the CSRN that accompanies the peripherals software.

Installing Additional Fonts

When you install the Peripherals software package, only default fonts are installed. Additional fonts are available on diskettes from WangDirect. Refer to the CSRN that accompanied your peripherals software for instructions to install additional fonts on the VS and/or OIS.

Configuring Printers (VS Only)

You configure printers when you are installing printers for the first time or when you are adding a new printer. You do this procedure after the peripherals software is installed by running the GENEDIT program from the RUN Program and Procedure selection on the Command Processor. Refer to the *VS System Administrator's Reference Guide* for more information.

Running WP Plus Conversion Utilities

After any additional fonts are installed, you may need to run the following WP Plus Conversion utilities (refer to Chapter 4 for procedures to use these utilities).

WP Plus Font Creation Utility — You must always run the WP Plus Font Creation utility after you have completed installing the Peripherals software package but only if you used FINSTALL to install the additional fonts. However, if you installed fonts (on the VS) through the Install from Archiver option on the WP Plus System Administration menu, it is not necessary to run this utility.

LIS-12/24 Font Auto-Creation Utility — You must run the LIS-12/24 Font Auto-Creation utility if you want to convert LPS-12 fonts to the LIS-12/24 format.

PostScript Font Sizing Utility — If you have installed an LCS15 printer, you may want to run the PostScript® Font Sizing utility to create point sizes for the fonts. The default fonts are in 12 point Portrait.

Assigning Print Routes

WP Plus requires that each printer have a specific print route. You assign print routes through WP Plus Supervisory Functions. Refer to *WP Plus Administrator's Guide* for the procedure to assign print routes.

Sending an Initial Print Job

Before you can access the font index, you have to send an initial print job to the printer. The print job can be either a hotprint of a document or a document sent through print.

Assigning Fonts

In WP Plus you use the Create option under Font utilities to create fonts for non-font loadable printers. Refer to Chapter 4 in this section for the procedure to create fonts. The fonts for font loadable printers are stored on a system disk. You assign fonts to documents and libraries through WP Plus Document utilities. Refer to the *WP Plus Reference Guide* for the procedure to assign fonts.

Printing Files

Having sent an initial print job and assigned fonts, you are ready to test fonts. Create a document in a library, assign various fonts to the text, and send it to the printer.
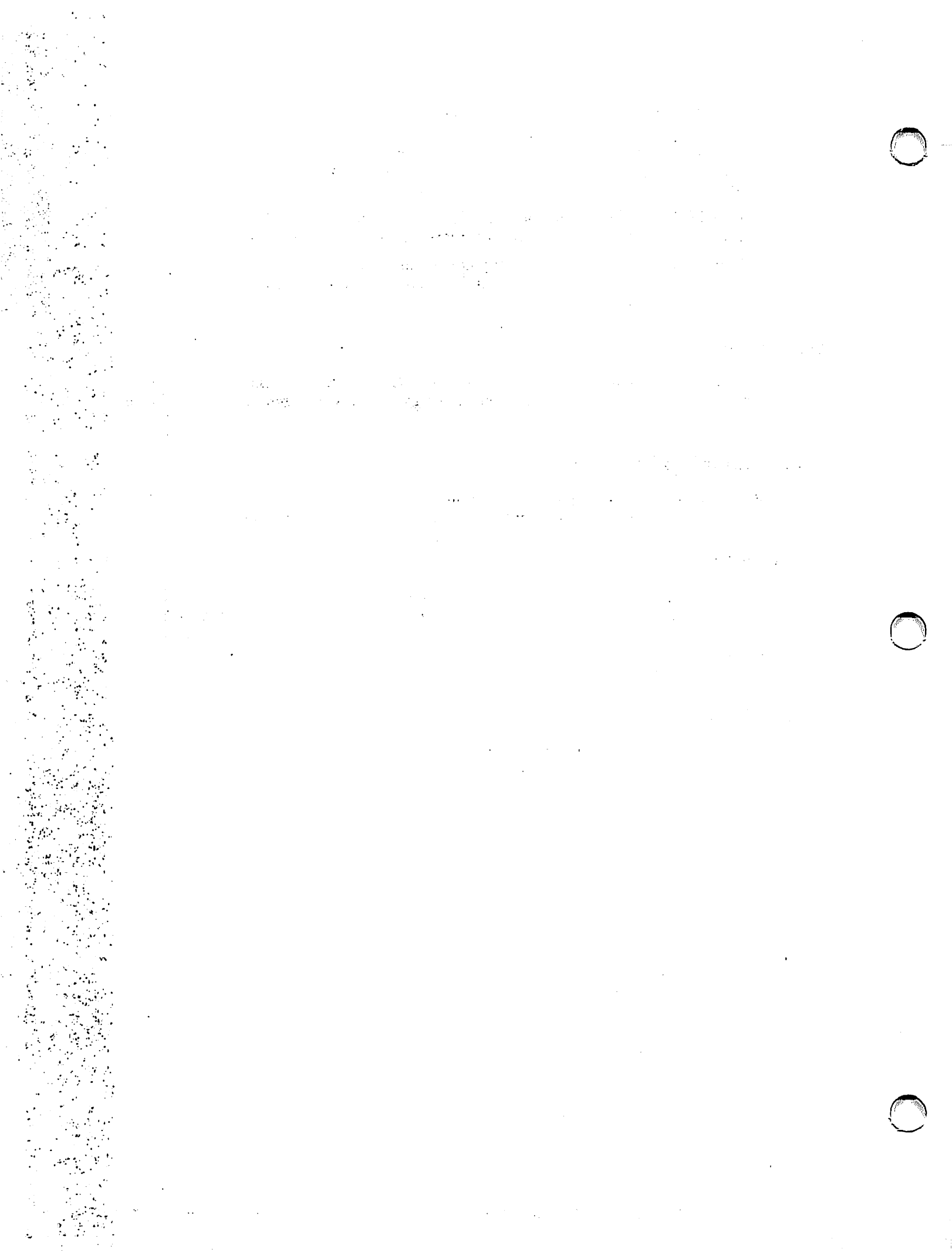
Chapter 2
WP PLUS PERIPHERALS SOFTWARE PRINTING FEATURES

INTRODUCTION

This chapter lists the types of files that are supported by WP Plus Peripherals software and presents the various printing features for WP Plus documents.

FILES SUPPORTED BY WP PLUS PERIPHERALS SOFTWARE

The following files can be printed using WP Plus peripherals software:

- WP Plus Documents
- WP Plus Text Files
- PC WP Plus Documents
- Scientific Equations
- VS 20/20 Spreadsheets
- CHARTER Graphs
- PIC™ Images
- VSGF

Note: These applications have specific minimum memory requirements for workstations. For specific requirements, refer to the CSRN that accompanies each application.

WP PLUS DOCUMENT PRINTING FEATURES

WP Plus document printing offers many useful features. They are presented here with a brief description of each and a list of the printers that supports them.

Auto Line Numbering

Supported on all printers.

Line numbering is a Print menu option that causes line numbers to be printed to the left of lines of text in the printout of a document. You can select which lines are numbered such as, every line, every other line, every fifth line and so on up to every tenth line. For example, if you choose every fifth line, lines 5, 10, 15, etc., will be numbered.

Line numbering not only numbers the lines of text, but also numbers the footnote separator, footnote continuation messages, and footnote text when printing end-of-page footnotes. This feature is available in both Draft and Final mode.

Line Drawing

Supported on LM400/700/900, 5577, 5578, LIS-12/24, LCS15, LDP8, and LPS8 printers.

Line Drawing for these printers (except LPS8) is included with the WP Plus Peripheral software. You can purchase In-Line and Line Drawing font cartridges from WangDirect for the LPS8 printer.

Line Drawing lets you draw vertical lines as well as horizontal lines, join them at the corners, and place arrows on either the vertical or horizontal lines, or both. For more information on Line Drawing, refer to the *WP Plus Reference Guide*.

Diacritics

Supported on LM400/700/900, 5577, 5578, LIS-12/24, LCS15, LPS8, and LDP8 printers.

Printing of diacritics (accent marks) is supported on LPS8 with In-line fonts. You can purchase In-Line and Line Drawing cartridges from WangDirect for the LPS8 printer. The 5574-1 printer will attempt to print diacritics, but the actual diacritic character printed is likely to be incorrect. Printing of diacritics is not supported on the 6581W-1, 6581WC-1, DW/OS-55, DW/OS-20, DW/OS-60, PM015, and OIS-PTR20 printers unless you have special print wheels. Diacritics are not supported on the VS-PM019 and LPS-12. The LDP8 printer will attempt to print diacritics but, because of font restrictions, the diacritic character may be incorrect.

Diacritic characters can be applied to any character in a document for the purpose of in-line scientific/mathematical equations. Diacritics are printed by overstriking one character with another during the printing process. Diacritic characters can be one of 15 character choices allowed by WP Plus for the LM400/700/900, 5577, 5578, LIS-12/24, LCS15, LDP8 and LPS8 printers. Some diacritic characters appear in the normal text fonts, while others require the special scientific character (In-line) fonts that are included with WP Plus.

Footnotes

Supported on all printers.

The Footnote utility inserts all necessary footnote labels before printing, and attempts to leave enough space on the page for referenced footnotes to be completely printed on the page. For more information, refer to the *WP Plus Author Applications Reference Guide*.

In-line Typing (Scientific Equations)

Supported on LM400/700/900, 5577, 5578, LIS-12/24, LCS15, LDP8, and LPS8 printers.

The In-line fonts for these printers (except LPS8) are included with the WP Plus Peripherals. You can purchase In-Line and Line Drawing font cartridges from WangDirect for the LPS8 printer.

In-line typing allows you to create scientific equations of limited complexity. This feature gives you access to the scientific characters and symbols of Scientific Keyboards 1 and 2. Scientific Keyboards enable you to use special characters in the creation of scientific and mathematical equations. For more information on using in-line typing, refer to the *WP Plus Reference Guide*.

Column Format Options

Supported on all printers.

Column Format feature lets you set the font and justification individually for each column of a format line. When you apply fonts that have different pitches to different columns in a format line, the widths of the characters in the format line are determined by the pitch of the font applied to each column. In a three-column region where each column is 20 characters wide, the column widths at the printer when using the different pitches are as follows:

Pitch Size	Width
10 pitch	2 inches wide
12 pitch	1 2/3 inches wide
15 pitch	1 1/3 inches wide

Column Format supports, on most printers, mixing proportional-spacing fonts with 10-, 12-, or 15-pitch fonts when you are printing columns that have different fonts and/or justification.

Multilevel Subscripts and Superscripts

Supported on all printers except LPS-12.

When you are printing 6 and 8 lines per inch, the offset between a normal line and a scripted line, and between a scripted line and a double scripted line, is 1/4 line (except for LCS15 and LDP8 printers where the value is 1/3 line).

The offset between a double scripted line and its corresponding normal line for all line spacing values above 1/2-line spacing is 1/2 line (except for LCS15 and LDP8 where the value is 2/3 line).

Note: The above values do not apply to the 5574-1 printer, which does only whole line spacing.

If you prefer a 1/2-line offset between a normal line and a scripted line, use double superscript or subscript attributes on the text instead of the normal superscript or subscript attributes. See the *WP Plus Reference Guide* for more information.

Because the space from one base line to the next is 1 1/2 lines, for single-spaced printed text, subscript text may overlap slightly with superscript text in the next line as shown in Example 2-1. To ensure adequate spacing between characters in a line of type and the line following it, use double spacing.

Example 2-1. Overlapping Subscript and Superscript Text

In this line the letters $_{yyyyy}$ contain double subscript attribute.
In this line the letters ^{bbbbb} contain double superscript attribute.

Page Numbering Style

Supported on all printers.

Page Numbering lets you select a specific page numbering style to use in printing page numbers in headers or footers. The choices are Numeric, Roman Uppercase, and Roman Lowercase. The style can be changed on a page basis in WP Plus documents. Refer to the *WP Plus Reference Guide* for more information.

PIC Imaging

Supported on LIS-12/24 printers only. On the other printers, space for the PIC image is left in the text.

This feature allows you to convert Image files from the PIC™ (the Wang Professional Image Computer) into a WP Plus library. After these files are converted, you can refer to them from WP Plus documents. For more information on PIC imaging, refer to the *WP Plus Reference Guide.*

Stop Reference Attributes

Supported on all printers except the LDP8.

The Stop reference option lets you leave a reference graphic in the document that alerts the printer to stop during the printing process to change paper, forms, colored printer ribbons, or to align pages on daisy and matrix printers. On non-laser printers, the printer stops before the line containing the Stop reference. On laser printers, the printer stops before the page containing the Stop reference.

Two-Up Printing

Supported on LIS-24 printer only.

Two-Up Printing lets you print standard 8½- x 11-inch documents so that two consecutive pages (up to 6 columns) print side-by-side, horizontally across a single piece of 11- x 17-inch paper. This feature matches pages of a standard document so that the first page is printed at the left margin of the 11- x 17-inch paper and the second page is printed half way across the paper parallel with the first page. This two-page printing process continues for the entire document. Refer to the *WP Plus Reference Guide* for the procedure and more information regarding this feature.

Leading

Supported on LCS15 and LDP8 printers.

The Leading feature lets you adjust the spacing between lines of point-sized text. For example, you may want to add an extra two or three points of space between lines of text to improve the readability and general appearance of the text. Leading is discussed in more detail in Chapter 5 in this section.

1 1/4 Line Spacing Value

Supported on all printers.

The value of 1 1/4 has been added under the Line spacing option on the Format Options and the print menu. If you select 1 1/4, the line spacing, between lines, is approximately 25% greater than that of single spacing.

Example 2-2 shows how text with 1 1/4 line spacing value will appear.

Example 2-2.   Text With 1 1/4 Line Spacing Value

```
The Line Spacing value for these two lines is 1.
Compare the space between these two lines with the next two lines.

The line spacing value for these two lines is 1 1/4.
Notice that the space between these two lines has increased.
```

Graphics

Supported on 5577, 5578, LM400/700/900, LIS-12/24, and LCS15 printers.

Graphic applications such as CHARTER, VS 20/20, and VSGF are supported.
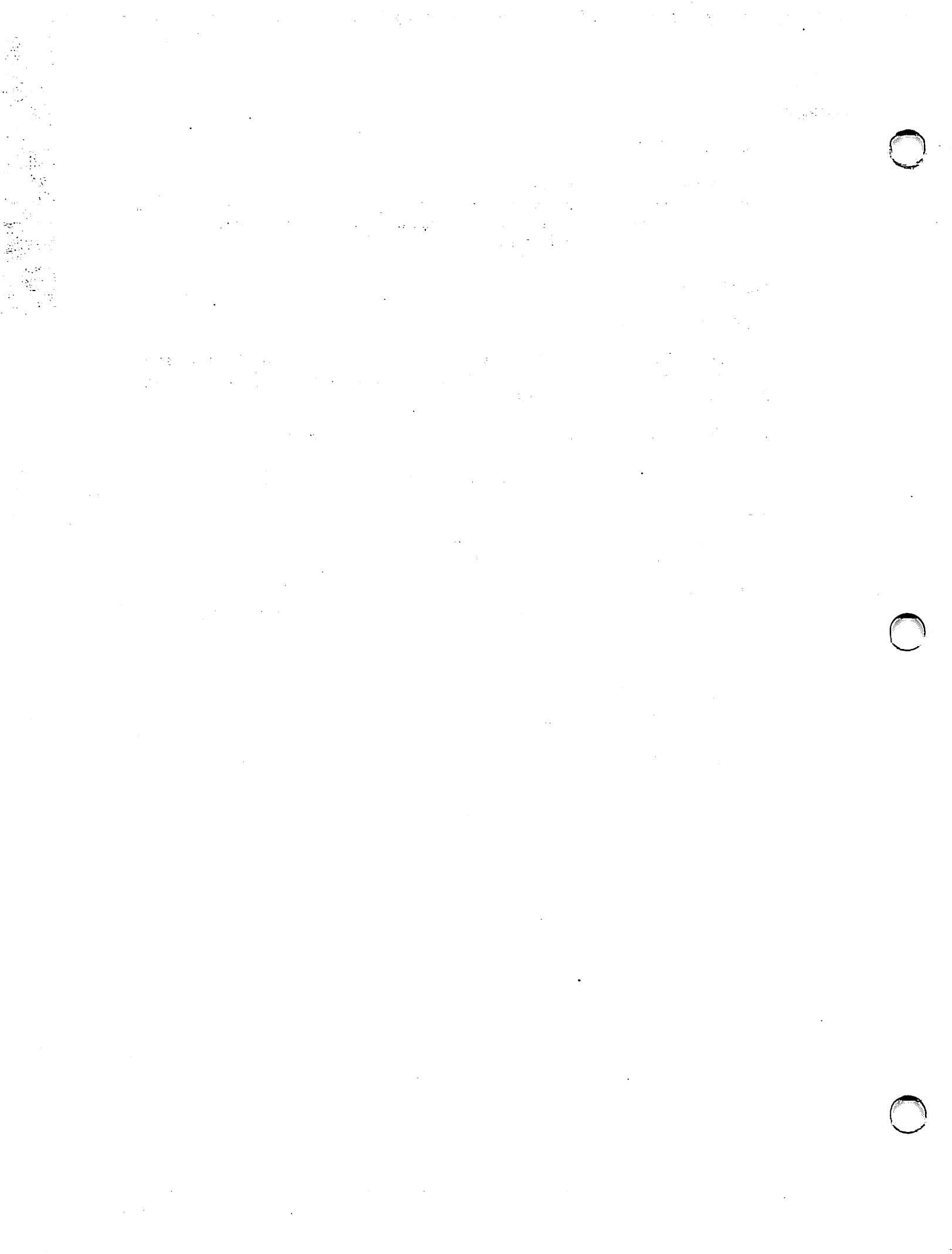
Chapter 3
SPECIAL CONDITIONS AND RESTRICTIONS FOR WP PLUS PERIPHERALS

OVERVIEW

Chapter 3 describes the special conditions and restrictions that exist in WP Plus Peripherals software. Probe numbers are included wherever applicable. Probe numbers are assigned to comments concerning the operation of the software; these numbers provide a basis for tracking the comments.

ALL PRINTERS

The following special conditions and restrictions apply to all printers.

Conditions

Graphs in a Three Column Document

Meaning

A three column document with full-width graphs in each column causes errors following the graphs if they are referenced on the last line of a multi-column format region, and you switch back to a single-column format after the graphs without ending the last lines of the columns with a carriage return.

Procedure

Place a carriage return after the text in the columns.

Printing With Notes

Meaning

Printing Notes is not supported.

Procedure

Use Optional Text instead. Optional Text is located in the Style menu. You can choose to print or not print text created under Optional Text. For more information on Optional Text, see the *WP Plus Reference Guide.*

Restrictions

Auto Line Numbering — When you apply the line numbering feature, use a minimum left margin of 7 for fixed pitch fonts. Refer to the *WP Plus Reference Guide*.

Box Graphics/Line Drawing Font — If you use a 15 pitch landscape Box Graphic/Line Drawing font at 6 lines per inch, vertical lines print as dashes rather than a solid line. Use 8 lines per inch to print a solid line.

Charter Graphs and Images — When you print a document that includes a Charter graph or image, if there is text that is smaller than six lines per inch, the first line of text below the graph or image is printed partially over the bottom portion of the graph or image.

Decrease in Print Speed — Print speeds decrease when graphs, equations, or images are included in the printout.

Default Font — A change of font at print time will only change your default font. If other fonts were used in the document, they will not be changed.

Diacritics and Line Drawings — When diacritics are applied to line drawings, the results are unpredictable. Sometimes the diacritics print, at other times they do not, and some diacritics cause the line drawing font to print with dashed lines if only one diacritic is applied to the line.

Diacritics Assigned to Spaces — Diacritic attributes assigned to spaces will cause the spaces to be treated as printable characters and not as word breaks. This will have the same effect as applying a No-Break attribute to the space.

Diacritics With Word-Wrapped Paragraph — When assigning diacritics to an entire word-wrapped paragraph in 10, 12, or 15 pitch, printers treat the paragraph as one complete word. Therefore, words are broken at column 80 even if it means breaking a word in the middle.

Draft Mode with Double Space — If you print a document in draft mode with double line space, the page break occurs at twice the document page break and not at the system page break. For example, if the page contains 53 lines and the system is set for a page break at 66, the page break occurs at 106 and not 66. (Probe Number F502092)

External References — Because external references cannot be partially printed, any graphic, scientific equation, or image whose reserved space extends beyond the end of the physical page will not be printed.

Font List — When installing the Peripheral software, after you IPL the VS, you must send a document to print in order to view the WP Plus font list.

Font Loading — During font loading, if you try to cancel, the messages "File not found" and "Access conflict" appear. When this occurs, try to cancel again.

Footnotes — The following restrictions exist for footnotes:

- If you change a font in any footnote's format options when printing footnotes in Continuous Spacing format, the change occurs with the footnote text, not the footnote label. Also, when printing footnotes in Continuous Spacing format, the line spacing of the first footnote is used for the entire footnote region.

- If you select Omit from the Print menu and if you select End of Page from the Footnote Utilities menu, the footnote does not print. If End of Document is selected from the Footnote Utilities menu, the footnote prints.

Graphics — If you try to cancel while graphs are printing, the messages "File not found" and "Access conflict" appear. If this occurs, try to cancel again.

Hotprint — The following restrictions exist for hotprint:

- When you hotprint a document on the VS, no information appears in the Library and Document ID fields of the Document Summary. (Probe number: F301192)

- If you press the hot print key in message control, you get an "invalid key" error message. Hot print is only supported in the WP Plus environment. (Probe number: F600287)

Hyphen Attribute — If a page breaks on a hyphen attribute in a fully justified document, the hyphen will not print. This occurs because the hyphen attribute appears on the first character of the next page instead of the page where the hyphen should print. (Probe Number: F401439)

"Illegal Width" Message — No "Illegal Width" message is given if a graph or image is wider than the page. Instead, the printer prints the part of the graph or image that fits on the page and omits the rest.

Images Printed in Landscape — If you attempt to print an image in Landscape on a page that does not have text or returns on the page, prior to the graphic, the image is printed in Portrait.

In-line Fonts — Do not delete In-line fonts; doing so may cause printers to stop and will require the power to be turned off and on when a document with diacritics is printed.

"Job Completed" Message — No "Job Completed" messages are sent to the workstation after a Charter file is finished printing.

Line Drawing — When using line drawing in a free form area, dec tabs do not line up with periods in the format line. (Probe Number F600623)

Merge Variables Document — Graphs, equations, and images found in the merge variables document will not be printed.

Mixing Pitches — If you have text in a line drawing, it must use the same pitch as the text that exists on the page outside the line drawing. (Probe Number: F301064)

NAME Key — In WP Plus Peripheral utilities, if you press the NAME key at the System Name field of the Default Changes menu, you get the message "Getting System List". No system list is displayed, however.

Print Queue — The print queue should not exceed 99 entries.

Proportional Spacing — The number 1 and the letter l are assigned different width values in proportional space printing. (Probe number: F011473)

Proportional Space Printing — Since no proportionally-spaced fonts exist for diacritics and Line Drawing, diacritics and Line Drawing are not supported in proportional spacing. Therefore, use 10-, 12-, or 15-pitch text fonts when printing diacritics or Line Drawing.

Redlining Attributes — When printing a document using Redlining attributes, if you select print with Change Bars Only, any deleted text prints with strike thru characters; any inserted text prints without change bars and double underscore. (Probe Number F600488)

Strike Thru — Strike Thru may not strike through the center of the character when you are using partial or full justification or proportional spacing. Instead, the strike thru characters are evenly distributed across the area to which the strike thru attribute is applied. On bidirectional printers this problem may be seen on the first character of a column or line.

Strike Thru With Scientific Character Set — Strike Thru does not print through diacritics and in-line fonts.

Stroke Fonts — If a stroke font used in a graphics file is not found on the system, either the characters requiring the font will not print or the entire graph will not print.

Superscript and Underline — If you have a word that has both underline and superscript styles, the underline gets raised under the superscript character. (Probe Number F301480)

Underscored Numbers — Because it is difficult for the underscore to reach the furthest left number in a column when using the align key, use the space bar to position the cursor for underscoring numbers in a column.

Unsupported Printer — WP Plus documents queued to an unsupported printer will not be printed. The printer remains in operation for printing non-WP Plus requests, however.

DAISY PRINTERS

The following special conditions and restrictions apply to all daisy printers.

Condition

Stop Reference Attributes

Meaning

Daisy printers deselect and set status to Change Paper at the beginning of a line containing a stop reference attribute (no text on the line is printed). A "Please mount appropriate form" message is sent to the operator workstation mailbox.

Procedure

Reselect the printer to resume printing. Text on the line is printed in the proper position with the proper font.

Restrictions

Diacritics — Special print wheels are required to properly print text with diacritic attributes. A print wheel change may not be indicated between printing the primary character and printing the diacritic. Diacritics are not recommended for use on daisy printers.

Fonts — Prestige Elite Special or Orator fonts created under VS/IIS or OIS WP cannot be duplicated under WP Plus. (Probe Number F010377)

Footers — If text extends beyond the assigned footer line number, the footer will be printed directly under the last line of text. (Probe Number F301790)

International Characters — International characters print as spaces with standard daisy wheels.

Strike Thru — All strike thru attributes are applied in a single font on daisy printers to avoid numerous daisy wheel changes. If you are using a proportional space font, the strike thru may not strike through the center of the character.

Twin Sheet Feeders — Illegal width messages are not returned on daisy printers when using a twin sheet feeder.

DW/OS-20 DAISY PRINTER

The following restrictions apply to the DW/OS-20 Daisy Printer.

Restriction

Strike Thru Character — When Change Bar Only is selected from the Print menu, the strike thru character still prints over the deleted text.

DW/OS-55 DAISY PRINTER

The following restrictions apply to the DW/OS-55 Daisy Printer.

Restrictions

Cancel a Document After Out of Paper — If you cancel a document after the printer runs out of paper, when you reload paper, the cancelled message prints over to the right on the platen.

Cancel a Document After Out of Paper in Standard Form — If you have selected Standard form and cancel a document after the printer runs out of paper (upper tray), when you reload paper and select, the printer loads a sheet from the lower tray and prints the cancelled message at the very top of the page cutting off the tops of the characters.

Deselect/Select — The following problems can occur if you rapidly select and deselect the printer: some characters do not print; the print job terminates and the printer malfunctions; or the print job terminates with an "Illegal Width" message.

Dual Sheet Feeder — Footers, with a Footer Line Number greater than 60, do not print on the specific line when the ATT option is set for a top margin of 6 and the DSF-55 is being used. Footers print at the correct position without the DSF-55. (Probe Number F501453)

Envelopes — When printing envelopes with the Dual Sheet Envelope Feeder, the top sheet of paper in the bottom tray intermittently creeps down until it interferes with the envelope feeder causing the "Change Paper" signal to light. (Probe Number F012799)

Multiple Fonts — Do not deselect the printer after you send a print job that contains many font changes. If you deselect the printer while it is changing fonts, the printer stops and requires IPLing. Additionally, font changes at the end of a line may give erroneous "Illegal Width" error messages.

Stop Codes — When a stop code is at the top of a page and is not followed by a Return graphic, columns do not align across the page.

Underscores — This printer cannot print underscores as fast as some other daisy printers.

DW/OS-60 DAISY PRINTER

The following restrictions apply to the DW/OS-60 Daisy Printer.

Restrictions

Cancelling Print Job — If you cancel a print job when the printer is changing fonts, the font change is cleared and the printer issues another font change to print the cancellation message.

Illegal Width Message — The following restrictions exist for illegal width messages:

- An illegal width message appears on the line preceding the line that contains the illegal width. (Probe Number F225068)

- If an illegal width occurs while printing 15 pitch landscape on 8½- x 14-inch paper, the illegal width message prints on the right margin (with each character printing on top of one another) and prints over the "Printout terminated by system" message.

Melanie PS — When printing with a Melanie PS print wheel, underscores print as a broken line. (Probe Numbers F502233, F013377, F012633)

Top of Form — The Top of Form button may be difficult to engage. This occurs only when the printer is processing text, which is just before individual footnotes are printed at the bottom of the page.

PM015 DAISY PRINTER

The following restrictions apply to the PM015 Daisy Printer.

Restrictions

EADC Board — When the printer is attached to a EADC board and the communications line is dropped, the printer will not pick up the next document in the queue unless the printer is powered off and on again.

Restart Page (Deselect, Top of Form) — This printer often processes text well ahead of what is actually being printed. Sometimes this causes errors in the Restart Page sequence (deselect, top of form) if the printer is near the bottom of the page when you are trying to restart.

OIS-PTR20 DAISY PRINTER

The following special considerations and restrictions apply to the OIS-PTR20 Daisy Printer.

Condition

Reselecting the Printer

Meaning

If the printer is reselected too quickly after a Restart Page sequence (deselect, top of form), the printer will deselect again and will have to be reselected.

Procedure

Wait until the print head has returned to the home position after a Restart Page before reselecting the printer.

Restrictions

Restart Page (Deselect, Top of Form) — This printer often processes text well ahead of what is actually being printed. Sometimes this causes errors in the Restart Page sequence (deselect, top of form) if the printer is near the bottom of the page when you are trying to restart.

Document Printing — You can do a line feed or a top of page without deselecting while a document is printing.

6581w DAISY PRINTER

The following restrictions apply to the 6581w Daisy Printer.

Restrictions

Dual Sheet Feeder — With the Dual Sheet Feeder, continuous forms pulls from the lower tray first instead of the upper tray. (Probe Number F402451)

MATRIX PRINTERS

The following special considerations and restrictions apply to all Matrix Printers.

Conditions

Stop Reference Attributes

Meaning

Matrix printers deselect and set status to Change Paper at the beginning of a line containing a stop reference attribute (no text on the line is printed). A "Please mount appropriate form" message is sent to the operator workstation.

Procedure

Reselect the printer to resume printing. Text on the line is printed in the proper position with the proper font.

Restrictions

Deselect — Graphics printing does not recognize the deselect button until all display file processing is finished.

Format Line Narrower than Graph — When printing a document with a graph and the format line is narrower than the width of that graph, the printer will print the document up to the graph, print an "Illegal Width" message, and terminate the print job.

Graphs — Graphs, metafiles, and scientific equations in WP Plus documents cannot exceed a width of 8 1/2 inches. Any part of a graph that exceeds 8 1/2 inches will not be printed.

Graphs — You can print graphs with WP Plus, but these procedures require preprocessing within the printer. This may appear to render the printer inoperative (for up to 10 minutes on most printers and 45 minutes on the 5578). During this time, Queue Control or Special Print Functions will indicate that the printer is printing, but no physical printing takes place.

5577 HIGH-DENSITY MATRIX PRINTER

The following special considerations and restrictions apply to the 5577 High-Density Matrix Printer.

Condition

Paper Jam

Meaning

A paper jam causes the printer (after correcting the jam and reselecting) to print a few lines and deselect repeatedly.

Procedure

Always press TOP OF FORM after a paper jam.

Restrictions

Background Color — The printer combines the background color with any fill pattern printed. If the background color is not white, all the fill areas will be printed completely black.

Diacritics — In some cases, diacritics overprint on ascenders, descenders, or uppercase letters.

DSF-77 — The following restrictions exist with the DSF-77:

- Cancelling a document during printing causes an access conflict, but the printer proceeds to cancel the document, and print the cancel message.

- When out of paper, if you cancel the print job, the message "Printout cancelled by operator" prints after you reload the paper but it may appear in unpredictable areas on the paper or the platen.

Envelope Tray — When using the envelope tray on the Ziyad feeder and printing WP Plus documents, you have to press the select button between each letter and envelope. (Probe Number F400976)

Font Changes — Font changes at the end of a line may give erroneous illegal width errors.

Line Drawing — You must print Line Drawing at eight lines per inch and the default font must be the same pitch as the Line Drawing.

Multiple Fonts — Do not deselect the printer after you send a document to print that contains many font changes. If you deselect the printer while it is changing fonts, the printer stops and requires IPLing.

Tractor Feed — If you cancel a document when the printer runs out of paper, after you reload the paper and select, the printer does a TOF 1 1/4 pages before the error message prints. The printer then does a TOF to the next perforation in the paper.

5578 COLOR MATRIX PRINTER

The following restrictions apply to the 5578 Color Matrix Printer.

Restriction

Ribbon Cartridge — The 5578 printer attempts to print even if the ribbon cartridge is removed.

LM400/700/900 MATRIX PRINTERS

The following special conditions and restrictions apply to the LM400/700/900 Matrix Printers.

Condition

Document Hangs Printer

Meaning

If a document hangs a printer, and you access the Special Print Functions to cancel the job, the message "No jobs on route" appears. If you now try to edit the document, the "Document in Use" message appears.

Procedure

Access Document Utilities to clear in use condition.

Restrictions

Background Color — Printers combine the background color with any fill pattern printed. If the background color is not white, the fill areas are printed completely black.

Diacritic Characters — The following restrictions apply to diacritic characters:

- All diacritic characters will print only if assigned to text characters that are printing in a letter quality font.

- Because diacritic characters from In-line fonts are not supported for the draft and memo type fonts, diacritic characters should not be assigned to text printing with draft or memo fonts.

Error Condition — When an LM printer is in an error condition (Change Paper, Change Ribbon), "Deselected" will be the only status displayed under Special Print Functions. The LCD on the printer's cover will define the error.

Fonts — The following restrictions apply for fonts:

- Draft fonts should be mixed only with other draft fonts.

- Correspondence fonts should be mixed only with other correspondence fonts.

- Near letter quality fonts should be mixed only with other near letter quality fonts.

- If the fonts are mixed, the printer will ignore any (illegal) font changes on a line causing the formatting to be disrupted.

Graphics — The following restrictions apply to graphics:

- All text bounding graphs must be in letter quality fonts.

- Graphs adjacent to scripted text may be printed with blank lines running through them.

Restart Page — Because of the printing speed and large buffer capacity of the LM printers, performing a Restart Page (Deselect/TOF) will cause unpredictable results.

LASER PRINTERS

The following special conditions and restrictions apply to all Laser Printers.

Conditions

Stop Reference Attributes

Meaning

Laser printers (except LDP8) that encounter stop reference attributes on a page will stop before the page is printed. A "Change paper" message is sent to the operator workstation. The printer displays a C4 (LPS-12 and LIS-12/24) or a Paper Out (LPS8) status light, or a change paper message (LCS15).

Procedure

Clear the Change Paper status (press the C button on the LPS-12, toggle the paper handle on the LIS-12/24, reselect the printer on the LPS8, or reselect the LCS15) and printing resumes from the bin indicated by the Forms choice on the Print menu.

Restrictions

"Breaking" Paper — Before you add paper to a paper tray, make sure that you "break" or fan the stack of paper. After you break the paper, realign the stack so that it is square.

Generic Fonts — Use of the generic fonts is not recommended. These fonts can be deleted through WP Plus Peripheral utilities.

Maximum Number of Lines — Generally, laser printers print a maximum of 64 lines of text per page on 8 1/2 x 11-inch paper at 6 lines per inch. Refer to Appendix C for paper sizes and the number of lines that can be printed on a page.

LIS-12/24 LASER PRINTERS

The following special conditions and restrictions apply to the LIS-12/24 Laser Printer.

Conditions

Cancel on Stop Code

Meaning

If you cancel a print job on the LIS-24 printer and it is deselected for a stop reference, a cancel message is printed from forms 2, the C4 (check paper) light remains on, and any jobs in the queue using continuous forms are printed from forms 2.

Procedure

Toggle the paper tray handle to continue the job before cancelling.

Special Customer Fonts

Meaning

Signature/Logo and other special customer fonts cannot be created correctly from the corresponding LPS-12 font for the LIS-12/24 printers using the LIS-12/24 Font Auto-Creation utility. The LIS-12/24 Font Auto-Creation utility cannot be used with Symbol fonts.

Procedure

Updated fonts are available from WangDirect to correct this condition.

Restrictions

Access Conflict — When an L1 (printer is not warmed up) code is displayed on an LPS12 or LIS-12/24 printer, you cannot cancel a job in the queue. Attempting to do so results in an "Access Conflict" message on the screen.

Background Color — The LIS-12/24 replaces any background color with the fill pattern when printing a graph.

Diacritics — In some cases, diacritics overprint on ascenders, descenders, or uppercase letters.

Double Subscripts — Double subscripts appearing on the last printable line of a page on the LIS-12/24 will not be printed.

Double Underscored — If you print text with double underscored style in 15 pitch Letter Gothic font, the bottom of the characters is cut off.

Draft Mode — Graphs, equations, and images will not be printed on the LIS-12/24 when printing in draft mode.

Expanded Type — On the LIS-12/24 text in expanded type causes an extra space to be added between lines.

First Line Indent with Superscript — If the first line of a page is indented, contains a superscript and is printed in landscape, the printout will have the first line print into the left margin and the superscript print too high above the text.

Format Line Narrower than Graph or Image — When printing a document with a graph or image and the format line is narrower than the width of that graph or image, the printer will print the document up to the graph or image, print an "Illegal Width" message, and terminate the print job.

Graphs and Equations — When you print graphs and equations in WP Plus documents on 17- x 11-inch paper or 11.69- x 16.53-inch international paper, the graph is printed on the left side of the page only. The maximum size of the image on 8 1/2- x 11-inch paper and the maximum size of the graph is 8 x 10.6 inches.

Images (damaged) — If an image is sent to the printer and the image is damaged, the printer freezes.

Images (deselecting) — After you send a job containing an image to the printer, do not deselect the printer before it starts printing.

LIS-12/24 Font Auto-Creation Utility — When you use this utility, all devices must be idle. Refer to Chapter 6, WP Plus Peripherals Utilities in this section for the procedure to run the LIS-12/24 Font Auto-Creation utility.

Line Spacing — Single line spacing at 8 lines per inch and anything less than single line spacing at 6 lines per inch is not supported around an image or graph.

Metafile — Graphics metafiles that contain text may not print.

Printer Index — WP Plus documents sent to print appear in the WP printer index but have no valid ID. They can only be canceled through WP Plus. (Probe Number F301706)

Printing Landscape — If a landscape font is specified in a document and the font is not found, the LIS-12/24 will print the text using a portrait font in the landscape direction.

LIS-24 LASER PRINTER

The following restrictions apply to the LIS-24 Laser Printer.

Restriction

Two-Up Printing — The following restrictions exist for Two-Up printing:

- When printing graphs, all graphs must be printed only on the left side of the page. If you attempt to print a document with two graphs on one page, the graph on the right side will print over the graph on the left side.

- Because a document summary prints on the left side of first page in a Two-Up printed document, do not print the document summary if you want page one of your document to print on the left side of the first page.

LPS-12 LASER PRINTER

The following special conditions and restrictions apply to the LPS-12 Laser Printer.

Condition

Stop References

Meaning
When printing a document with stop references, the printer displays a C4 status code and, after several seconds, displays a CL status code.

Procedure
Toggle the paper tray handle or press the C button on the printer to resume printing.

Restrictions

Access Conflict — When an L1 (printer is not warmed up) code is displayed on a laser printer, you cannot cancel a job in the queue. Attempting to do so results in an "Access Conflict" message on the screen.

Assigning an Alternate Font — The LPS-12 printer can print only two different fonts per job, the job default font and an alternate font. The alternate font must be assigned to at least one printable character (assign to a space graphic) in the first printed line of the document including the header if there is one.

Bin Lever — If you turn the bin lever of the LPS-12 printer to add paper, the Malfunction activity code displays. The Malfunction code remains until a job is queued and printed.

Diacritics — The following restrictions exist for diacritics:

- Diacritics are not supported on the LPS-12. Documents containing diacritics and printed on the LPS-12 will terminate with the message "Diacritics not supported on this printer".

- The LPS-12 will appear to terminate a document that contains diacritics combined with footnotes several lines earlier than the actual occurrence of the diacritic on the page.

Document Wider than Paper — On the LPS-12 printer, if the document width specified in the format line is wider than the paper width, the text wraps around to the next line and a character is not printed.

Expanded (Bold) Type — On laser printers, printing text in expanded (bold) type causes an extra space to be added between lines.

Footers — If you print only a page of a document that has bold assigned to a footer, the bold will not print. Bold will print in the footer when you print the entire document. (Probe Number F301806)

Landscape — When printing in Landscape, the printer may occasionally eject a blank piece of paper. No data is lost in the printout.

Mixing Portrait and Landscape Fonts — Portrait and Landscape fonts cannot be mixed within a document.

Multilevel Superscripts and Subscripts — This printer does not support multilevel superscripts and subscripts, since it has no capability for partial line spacing. If a second-level double script is detected by an LPS-12 printer, the job is aborted with the message "Illegal Script".

Page Overflow — In some instances of page overflow on the LPS-12, a line is printed at the top of the current page instead of overflowing onto the next page.

Paper Jam — If a paper jam occurs, the printer may lose or overprint pages.

Strike Thru — The following restrictions apply to Strike thru:

- For the LPS-12 the Strike thru character cannot be changed by means of the System Standards or Unit Standards Default Changes. The Strike thru character is fixed as a slash.

- You cannot strike-thru spaces; the slashes appear on the screen but will not print out. (Probe Number F5011905)

Subscripts in Lower Case — If subscripts are entered in lower case with double underscore attribute, they remain on the same level as the baseline. If the subscripts are entered in upper case with double under score, they will be positioned correctly.

Text Overflow — When a text overflow occurs and superscript or subscripts are being used, extra overflow pages may be printed.

Underscore — The LPS-12 printer cannot print text with both the underscore and strike thru attribute applied to it. When this combination occurs, only the strike thru attribute is printed.

Using Fonts with Different Pitches — The LPS-12 laser printer cannot mix text in a 15-pitch font with any other pitch font.

8 Lines per Inch — The LPS-12 does not print 10 and 12 pitch at 8 lines per inch.

15-Pitch Fonts — Text using 15-pitch fonts can only be printed at 8 lines per inch.

LPS8 LASER PRINTER

The following restrictions apply to the LPS8 Laser Printer.

Restrictions

Best Match Fonts — When using a best match font, the text may not always justify correctly.

Canceling a Document — To stop a document from printing, you must deselect the printer. If you cancel a document without deselecting the printer, the document still prints. If you try to cancel the document again without deselecting the printer, a printer malfunction message will appear. (Probe Number F501217)

Diacritics — If no In-line Scientific font of the same pitch as the text character is found on the system, an incorrect diacritic from 10-pitch Courier is printed instead.

Double Subscripts — If a subscript or double subscript appears on the last printable line on the LPS8, the subscripted text appears on the next page and the remaining overflow prints on a third page.

Double Underscored — If you print text with double underscored style in 15-pitch Letter Gothic font, the bottom of the characters is cut off.

DSF8 Ziyad Feeder — When printing a multipage document, with a DSF8 Ziyad feeder, if a paper jam occurs, the page that was printing will not print after you clear the paper jam. (Probe Number F700435)

Footnotes — When printing in the landscape mode, the footnotes print a couple of lines below the actual text instead of on the specified line. (Probe Number F402631)

Fonts — The LPS8 will support three font styles (the internal 10 pitch Courier font plus two fonts from the attached cartridges) on one page. (Probe Number F502486)

In-line Fonts — If you assign only an In-line font to a document, the entire document will print with the In-line font.

Landscape/Portrait — The LPS8 printer does not support mixing landscape and portrait within a print job.

Paper Feed — When the printer is set for standard, the printer pulls the first sheet from the manual feed and the remaining sheets from the paper tray. (Probe Number F301841)

LCS15 LASER PRINTER

The following special conditions and restrictions apply to the LCS15 Laser Printer.

Condition

Canceling Jobs

Meaning

During font loading and printing graphics, there is a difficulty cancelling jobs, and the messages "File not found" and "Access conflict" will be displayed.

Procedure

Cancel again.

Restrictions

Adding Paper to the Lower Tray — When the LCS15 prompts you to add paper to the lower tray, remove the tray before adding the paper. When you reinsert the lower tray, the printer detects that you added paper.

Background Color — In graphics, any background color will be replaced with the fill pattern.

Change Bars — Not all point-sized fonts on the LCS15 have Change Bars in the character positions when printing in the default font. If this occurs, use the Unit Standards option in peripheral utilities to assign valid Change Bar characters (refer to Chapter 6 in this section for peripheral utilities procedures).

Document summary and error messages — On the LCS15 the document summary and error messages will print in 10 point Courier portrait.

Font sizes –- Font sizes on the LCS15 that are greater than 10 point will print the redline change bar in 10 point Courier.

Footnotes — When printing footnotes at the end of a page if more than three footnotes overflow to the next page, some of them will be numbered incorrectly.

Graphs — The following restrictions apply to graphs:

- Graphs referenced from lines with tabs or centered lines print slightly larger than they should.

- The standard for defining the depth of the reserved area in which a graph will be printed is 1/6 inch per line.

Images — At this time, images are not supported on the LCS15.

In-line Fonts — When you use double scripts, the arcs do not align properly.

Legal-Size Trays — If you specify a page length of 84 with Continuous or Standard as the Forms option and you select the Automatic Paper Change option in the Peripheral Utilities, the LCS15 must have legal-size trays in *both* the upper and lower bins.

Paper Jams — If the LCS15 jams one or more pages while printing a document or a file, you should resubmit the print request to the printer after correcting the jam. The LCS15 does not automatically reprint pages that were jammed.

Print Speed — The LCS15 printer can only print up to 7.5 pages per minute when using 8.5- x 14-inch paper.

Special Characters — The special character, north arrow, (↑) does not print out correctly; only the point of the arrow prints — not the shaft.

Using tabular columns — If you use typographic fonts with tabular columns, make sure that the text in one column does not overlap another column to the right. This situation causes columns to align incorrectly. Since typographic fonts can be larger than the text on the screen, the printed text may not align (even though it does on the screen), especially with the larger point sizes (greater than 12). Refer to Appendix E for more information on formatting for typographic fonts.

LDP8 LASER PRINTER

The following special conditions and restrictions apply to the LDP8 Laser Printer.

Conditions

"21 ERROR" Condition

Meaning

The "21 ERROR" condition is displayed on the printers control panel when pages are not printed because the page intermediate data cannot be processed and printed fast enough to keep up with the physical speed of the paper as it moves through the printer.

Procedure

This page can never be printed in its present condition; however, if you remove or redistribute the data on the page the page will print.

Stop Reference

Meaning

Because the stop reference is not supported, there is no way to automatically deselect the printer.

Procedure

Queue documents to use Form 1 to put the printer into manual feed.

Restrictions

Auto Continue — If the Auto Continue switch, located on the front panel, is set to the on position, the LDP8 will continue printing after an ERROR 21 or Change Paper message is displayed. Keep the switch set to the off position to avoid this.

Best Match Fonts — If documents to be printed on the LDP8 have fonts assigned that are not loaded on the LDP8, a best match of the font will be made. Because it is not possible to predict which font will be selected as best match, printed results may vary from the original. The only way to ensure consistent output is to insure that fonts assigned to a document are available to the printer.

Bold — If a line of text occupies the entire printable width of a page, the last character on a line cannot be bolded. Applying bold would exceed the printable width of the page.

Font Cartridges — The Document index screen lists the cartridge fonts that are available for the printer. However, selecting a font from the font index does not guarantee that the font will be used. You must insure that the correct cartridge, containing the desired font, is inserted in the printer. If the cartridge is not the one assumed to be in the system, the printer attempts to use a font that is a best match, but incorrect text formatting may result.

Identical Fonts — The peripherals software allows identical fonts to be installed on the printer. If identical fonts are loaded into the system, the last font loaded will be selected.

Mixing Cartridges — Unpredictable results occur if F and Z cartridges are inserted into the LDP8 printer at the same time.

Number of Fonts — The number of fonts that can be used on a page is limited to the number of fonts that can be loaded in the printer memory. When the memory is full the system attempts to make a best match for the remaining fonts assigned to a page.

Paper Size — The 13 in. paper sizes, such as 8 x 13 in., 8.27 x 13 in., and 8.5 x 13 in., are not supported.

Portrait and Landscape — LDP8 does not allow portrait and landscape printing to be mixed on a page.

Printable Area — The printable area has a 1/6-inch left margin and a 1/3-inch right margin.

RAM — The amount of RAM in the printer has a direct impact on performance and functionality. More RAM means more fonts can be used on a page and the printing of a page with multiple fonts is faster. Set the switches on the siblink board to indicate the amount of RAM.

5574-1 BAND PRINTER

The following special conditions and restrictions apply to the 5574-1 Band Printer.

Conditions

Diacritics

Meaning
Diacritics will usually print incorrectly.

Procedure
Since this printer is for draft purposes only, you can print text that contains diacritics without causing the printer to abort, but the diacritics do not print correctly.

Restrictions

Canceling a Document — When you cancel a printout after the printer is out of paper, there may be an Access Conflict. However, this is only temporary, when you load paper and reselect the printer, the canceled message appears and the document is canceled.

Multilevel Superscripts and Subscripts — Because the 5574-1 printer cannot do partial line spacing, second level scripts will print the same as first level scripts on lines that have no first level scripts.

Pitch of Default Band — The printer will deselect if the pitch of the default font is different from the pitch of the font used on the previous job. Also, the default font defines the pitch in which the entire job will be printed.

Top of Form at 8 LPI — When printing and the switch is set at 8 lines per inch, if you do a Top of Form, the printer does not go to the top of the next perforation but goes well beyond the perforation.

WP PLUS PERIPHERAL UTILITIES

The following special conditions and restrictions apply to WP Plus Peripheral utilities.

Condition

Single Font Diskette Update

Meaning

The Single Font Diskette is not supported on the VS.

Procedure

To install single font diskettes on the VS, run the program FINSTALL from the command processor. After installing the font, run the WP Plus Font Creation utility. This utility will create the WP Plus font(s) on your system. If you install the font through the Install from Achiver option on the WP Plus System Administration menu, you do not need to run the Font Creation utility.

Restrictions

Alter a Font — The Alter a Font utility is available only to (and necessary for) routes supporting daisy printers. Refer to Chapter 4, WP Plus Peripheral Utilities, in this section for the procedure to run the Alter a Font utility.

Auto Creation — When Auto Creation is run and it encounters libraries whose names are similar in format to font library names, it terminates, does not create proper fonts, and gives no error message. (Probe number: F300442)

Create a Font — The Create a Font utility is available only to (and necessary for) routes supporting daisy printers. Refer to Chapter 4, in this section, for the procedure to run the Create a Font utility.

Delete a Font Utility — The Delete a Font utility is the only method advised for deleting fonts. DO NOT use either Single File Delete (OIS) or Manage Files (VS) to delete font files. Refer to Chapter 4, in this section, for the procedure to run the Delete a font utility.

Font Utilities — When using Font utilities, do not allow any workstation to display the Font Index from the Print menu, Modify/Define Document Prototype menu, or Document Options menu.

Symbol Fonts — LIS-12/24 Font Auto-Creation utility and Single Font Diskette Update cannot be used with Symbol fonts.

Unit Standards — If you set unit standards for any device, using WP Plus Peripheral utilities, be sure the Strike thru character, Change Bar character and Deleted Text Indicator have character codes other than a space.

Chapter 4
WP PLUS PERIPHERAL UTILITIES

OVERVIEW

This chapter provides you with the procedures you need to run the following WP Plus Peripheral utilities:

Font Utilities — This utility enables you to create, delete, and alter fonts. It is also used to order the sequence of fonts.

Default Changes — This utility enables you to change the printer default values for Redlining attributes, Return mailbox, and text file font.

Conversion Utilities — This group of utilities enables you to transform, convert, and update fonts by using one of the following utilities: LIS -12/12 Font Auto-Creation, WP Plus Font Creation, and Single Font Diskette Update (for OIS only). The PostScript Font Sizing utility enables you to create point size fonts for the LCS15 printer.

ACCESSING WP PLUS PERIPHERAL UTILITIES

Perform the following steps to access the WP Plus Peripheral Utilities menu. Note that while you are accessing these utilities, all printers should be turned off.

Procedure

1. Select the Supervisory Functions option from the WP Plus Main menu and press the EXECUTE key. The Supervisory Functions menu appears.

2. Select the System Administration option and press the EXECUTE key.

   - On a VS system when the prompt, "to continue, press EXECUTE" appears, press the EXECUTE key. The System Administration menu appears.

   - On an OIS system, select the System Administration option, enter your valid password, and press the EXECUTE key. The System Administration menu appears.

3. Select the Route Profiles option and press the EXECUTE key. The menu selections for Route Profiles appears.

4. Select the WP Plus Peripheral Utilities option and press the EXECUTE key. The WP Plus Peripherals Utilities menu appears.

FONT UTILITIES

The Font utilities allow a wide variety of functions to be performed on both font and non-font loadable printers. A font loadable printer uses software-based character sets and stores the information about them (size, style, slant) on a system disk. Non-font loadable printers are those whose font images are formed from physical objects, such as print wheels or bands.

You can perform the following procedures through the Font Utilities:

- Create a Font (for non-font loadable printers only)
- Delete a Font
- Alter a Font (for non-font loadable printers only)
- Order Font Families

Accessing Font Utilities

Perform the following steps to access the Font Utilities:

Procedure

1. Select the Font Utilities option from the Peripheral Utilities menu and press the EXECUTE key. You are prompted to enter the print route.

2. Enter the name of the print route. If you do not know the print route, press the NAME key to display an index of all available print routes. Press the Space Bar to select the desired route and press the EXECUTE key. The route you selected is automatically inserted into the Route field.

3. Press the EXECUTE key. The Font Utilities menu appears as shown in Figure 4-1.

```
WP Plus Peripherals Utilities — Rel xxx
Font Utilities



Make a Selection, then Press EXECUTE                    Route:


  _ Create a Font
  _ Delete a Font
  _ Alter a Font
  _ Order Font Families
```

Figure 4-1.   WP Plus Font Utilities Menu

Creating a Font

This procedure allows you to add new or special non-font loadable printer fonts to your WP Plus system. This option is available and necessary only on non-font loadable printers.

The following procedure describes how to create a new font.

Procedure

1. Select the Create a Font option and press EXECUTE. An index of the current font families for the route selected is displayed.

2. Select the font family you want and press EXECUTE.

3. On the next screen, select the Translation Table Type for the font family you selected and press EXECUTE.

4. The next screen lists the three font attributes, Size, Density, and Slant that you assign to the font family. Use the space bar to position the acceptance block next to the Size attribute you want. Then press the RETURN key to move to the Density attribute field. Make your selection for Density and press RETURN to move to the Slant attribute field and make that selection. Press the EXECUTE key when you have finished assigning the font attribute values.

   If you make no selections the defaults (the first selection under each attribute containing an acceptance block) will be entered.

5. Press the EXECUTE key again to begin the process. When finished, the message "Creation Successful" appears and the screen returns to the Font Utilities menu.

6. Press the CANCEL key until you return to the WP Plus main menu.

Deleting a Font

This procedure is used to remove one or more fonts from the Font Index of a print route.

The following procedure describes how to delete an existing font.

Procedure

1. Select the Delete a Font option from the Font Utilities menu and press the EXECUTE key. A list of the current fonts for the route selected is displayed on the screen.

2. To delete a single font, position the acceptance block next to the font and press the INSERT key followed by the EXECUTE key.

   To delete multiple fonts, position the acceptance block next to each font you want to delete and press the INSERT key. After selecting all the fonts for deletion, press the EXECUTE key.

3. The font(s) selected for deletion appears on the screen. Press the EXECUTE key to begin the deletion process.

   Press the CANCEL key at any time during the deletion process to stop a font from being deleted.

4. When finished the screen returns to the Font Utilities menu. Press the CANCEL key until you return to the WP Plus Peripheral Utilities menu.

Altering a Font

This procedure, done for non-font loadable printers, lets you alter (or reassign) a keyboard character so that it prints a character different from the one seen on the key. This allows you print characters on a font that are not assigned to the keyboard. For example, in the Letter Gothic font you may want to reassign the "at" symbol (@) to print the degree symbol (°). Then whenever you press the @ key, the "at" symbol appears on the screen; however, the degree symbol prints when the Letter Gothic font is specified on the Print menu.

The substitute key assignment applies to all workstations on the system and remains in effect until the key is changed again. All other fonts on the system are unaffected by the substitution.

In altering a font, you change the hex code and associated values of the keyboard character with the hex code and values of the new character. The following procedure describes how to alter a font.

Note: Be sure all printers are idle before attempting this procedure.

Procedure

1. Select the Alter a Font option from the Font Utilities menu and press the EXECUTE key. The Font Index for the print route selected is displayed on the screen.

2. Use the space bar to position the acceptance block next to the font you want to change and press the EXECUTE key. The Alter a Font screen appears as shown in Figure 4-2.

```
WP Plus Peripherals Utilities — Rel xx.xx
Alter a font


Make desired changes, Press EXECUTE              Route: _____


Selected Font:
    Courier   12 Pitch   Regular                        Standard


    Character .   Hex code 20


    Primary Font Position 44     Hammer Energy 2
    Overstrike Font Position 00  Width 5
```

Figure 4-2. WP Plus Alter a Font Screen

The Alter a Font screen displays each font character, starting with a space ( ) and its corresponding Hex Codes, Primary Font Position, Hammer Energy, and Width value (the Overstrike Font Position is not used at this time, see Remarks). You can access all the font characters through this screen, (press the PREV and NEXT key) and by reassigning these values you can alter keyboard characters to print new characters.

3. Find and write down the hex code value for the new character to be assigned to the keyboard by using the Screen Character and Hex Code Table in Appendix B.

4. To see the Primary Font Position, Width, and Hammer Energy values for this character, use the RETURN key to move the cursor to the Hex Code field. Enter the hex code of the new character, and press the RETURN key. The character symbol and the values for the new character appear on the screen.

5. Write down the Primary Font Position, Width, and Hammer Energy values of the new character. You will enter these values when you reassign the keyboard character.

6. You now have to locate the keyboard character (select one seldom used) that will be reassigned. Select the keyboard character that you are reassigning by one of the following ways:

    – With the cursor at the Character field, use the NEXT SCRN and PREV SCRN keys to move through the Alter a Font screen until you find the character to be reassigned.

    – If the character is accessible from the keyboard, type the character in the Character field and press the RETURN key. The values of the character to be reassigned are displayed.

Note: Write down the Font, Primary Font Position, Width and Hammer Energy value of the keyboard character that you are reassigning. You will use these values if you change the key back to its original character symbol.

7. Using the RETURN key move the cursor to the Primary Font Position, Width, and Hammer Energy fields and type in the corresponding values that you had written down, from the table in Appendix B, for the new character.

8. Press the EXECUTE key twice to record the software change to the system disk. The Alter Font screen reappears.

9. Press the CANCEL key until you return to the main Peripheral Utilities menu.

Remarks

Overstrike — To change the Overstrike character you follow the same procedure as above except, instead of reassigning the Primary Font Position, Width, or Hammer Energy values, you change only the Primary Font Position and Overstrike Font Position hex codes. Because the Overstrike is a combination of two characters, the Primary Font Position and Overstrike Font Position fields contain the screen character's hex code for the individual characters that make up the overstrike character. The width of the entire overstrike character is determined by the width of the Primary Font Position character. The Primary Font Position character is usually the more predominant or wider character, so that the overstrike character prints properly in proportional space.

Test Changes — To test any change you made, create a document and use the special character in it. The keyboard character appears on the screen. However, when you send the document to the appropriate printer, the special character prints in the document.

To Return key to Original Character — To return a key to its original character, perform the following procedure:

Procedure

1. Access the Alter the Font screen for the same print Route and Font.

2. With the cursor in the Character field press the keyboard character that has been reassigned and press the RETURN key.

3. The Hex Code and associated values for the new character appear on the screen. Replace the Hex code, Primary Font Position, Hammer Energy, and Width with the original values of the keyboard character.

4. Press the EXECUTE key twice. The Alter the Font screen reappears.

Order Font Families

This procedure allows you to rearrange the order of the font listed in the Font Index.

The following procedure describes how to order font families.

Procedure

1. Select the Order Font Families option from the Font Utilities menu and press the EXECUTE key. A Family Index of the current font families is displayed.

2. To change the order, use the RETURN key to move from one font family to another. Type over the existing number to change the sequence.

3. When you have finished renumbering the font families, press the EXECUTE key.

4. Press the EXECUTE key again to begin the procedure. When finished, the message "Operation Successful" appears and the screen returns to the Font Utilities menu.

5. Press the CANCEL key until you return to the WP Plus main menu.

DEFAULT CHANGES

Default Changes allow you to change the printer defaults for the Redlining attributes, Return mailbox, and text file font. The defaults can be altered on a system-wide or a specific-printer basis. After the default values have been altered, they remain in effect until reset.

You can perform the following procedures through Default Changes:

- Set System Standards
- Set Unit Standards
- Reset All Unit Standards

Accessing the Default Changes Menu

Perform the following steps to access the Default Changes menu:

Procedure

1. Select the Default Changes option from the WP Plus Peripheral Utilities menu and press the EXECUTE key.

   The prompt "System: _____" is displayed on the right side of the screen. Do not alter the contents of this field on the VS, as unpredictable results could occur.

   On OIS systems, you can press the NAME key to generate a list of all available systems.

2. Press the EXECUTE key. The Default Changes menu appears as shown in Figure 4-3.

```
WP Plus Peripheral Utilities — Rel xxx
Default Changes



Make Selection, then Press EXECUTE                        System:



_ System Standards
_ Unit Standards
_ Reset all Unit Standards
```

Figure 4-3. WP Plus Default Changes Menu

System Standards

This option allows you to alter WP Plus defaults on a system-wide basis. You can change the following items:

- Strike Thru Character (normally a slash)
- Revision Bar Indicator (normally a vertical bar)
- Deleted Text Indicator (normally an up arrow)
- Return Mailbox
- Text File Font (used to print logs and indexes).

The following procedure describes how to change system standards.

Procedure

1. Select the System Standards option from the Default Changes menu and press the EXECUTE key. The System Standards screen appears as shown in Figure 4-4.

```
WP Plus Peripheral Utilities — Rel xxx
System Standards


Press EXECUTE to save changes, NAME to        System:
select new text file fonts:

Strike Thru Character     /    Hex Code  2F
Revision Bar Indicator    |    Hex Code  86    Return
Deleted Text Indicator    !    Hex Code  8B    Mailbox No. 000

WP Plus Text File Font:
  Family        Size        Density      Slant      National subset
  Courier       10 Pitch    Regular                 Standard
```

Figure 4-4.   WP Plus System Standards Screen

2. To change any of the Redlining attributes or the Return mailbox, use the RETURN key to position the cursor at the selection(s) you want to change.

   - For the Redlining attributes, either move the cursor to the character field and type the new character from the keyboard, or move the cursor to the hex code field and enter the hex code.

   - To change the Return mailbox, enter the new number you want.

   If you do not want to change the text file default font, press the EXECUTE key and go to Step 7.

3. To change the text file default font, press the NAME key. The Route prompt appears.

4. Enter a print route (you must enter a route so the system can access a list of fonts) and press the EXECUTE key. The Default Font menu appears.

5. Use the space bar to select the default font. Select a font that will be available on all print routes (use the NEXT key to view the next screen of fonts). Press the EXECUTE key. The screen returns to the System Standards screen.

   If the default font is not available at print time, the system chooses a best match to the default font.

6. Press the EXECUTE key to save the changes. The system displays the prompt "Press EXECUTE to begin".

7. Press the EXECUTE key. The changes are made and the system returns to the Default Changes menu.

Remarks

System Defaults — The Strike Thru character is used for printing text with the Redline (Deletion) attribute. The Deleted Text Indicator supports the old revision mark capability.

Unit Standards

The Unit Standards option lets you change the WP Plus defaults on a specific printer. You can change the following items:

- Strike Thru Character (normally a slash)
- Revision Bar Indicator (normally a vertical bar)
- Deleted Text Indicator (normally an up arrow)
- Return Mailbox
- Text File Font (used to print logs and indexes)
- Printer Options

Printer Options is an additional field on the Unit Standards menu. The first option in this field allows you to select either traditional bold or expanded bold for LIS-12/24 printers only (all other printers ignore this field).

- If Bold is selected in Step 3 of the following procedure, the bold characters printed on the LIS-12/24 appear in heavy type.

- If Expanded is selected in Step 3 of the following procedure, the bold characters printed on the LIS-12/24 print with twice the height of normal characters.

The second option allows you to choose manual or automatic paper change for LIS-12/24 or LCS15 laser printers only. You choose manual or automatic paper change to do the following:

- If Automatic Paper Change is selected in Step 3 of the following procedure, the LIS or LCS printers stop and display a code whenever the page length value or the form selection value changes between print jobs or stop reference codes.

- If Manual Paper Change is selected in Step 3 of the following procedure, the LIS or LCS printers stop printing only when a Stop Reference is encountered in the text of a document or when the paper supply runs out.

The following procedure describes how to set unit standards.

Procedure

1. Select the Unit Standards option from the Default Changes menu and press the EXECUTE key. You are then prompted to enter the unit number whose default values you want to change.

2. Enter the unit number and press the EXECUTE key. The Unit Standards screen appears as shown in Figure 4-5.

```
WP Plus Peripheral Utilities — Rel xxx
Unit Standards


Press EXECUTE to save changes, NAME to      Unit No:
select new text file fonts:

Strike Thru Character  /     Hex Code 2F
Revision Bar Indicator |     Hex Code 86    Return
Deleted Text Indicator t     Hex Code 8B    Mailbox No. 000

WP Plus Text File Font:
   Family        Size        Density    Slant     National subset
   Courier       10 Pitch    Regular              Standard

PRINT
OPTIONS:  LIS, LCS          LIS

■ Manual Paper Change        ■ Bold
_ Automatic Paper Change     _ Expanded
```

Figure 4-5.   WP Plus Unit Standards Screen

3. To change any of the Redlining attributes, Return mailbox, or Print Options, use the RETURN key to position the cursor at the selection(s) you want to change.

   - For the Redlining attributes, either move the cursor to the character field and type the new character from the keyboard, or move the cursor to the hex code field and enter the hex code.

   - To change the Return mailbox, enter the new number you want.

   - To change the Print Options use the space bar to select the options you want. Refer to the explanation at the beginning of this section for a description of the selections.

   If you do not want to change the text font default, press the EXECUTE key and go to Step 7.

4. To change the text font, press the NAME key. The Route prompt appears.

5. Enter the print route number and press the EXECUTE key. The Default Font menu appears.

6. Use the space bar to select the default font and press the EXECUTE key. (Use the NEXT key to view the next screen of fonts.) The screen returns to the System Standards screen.

7. Press the EXECUTE key. The system displays the prompt "Press EXECUTE to begin".

8. Press the EXECUTE key. The changes are made and the system returns to the Change Defaults menu.

Reset All Unit Standards

This option resets all unit standards to current system standards.

The following procedure describes how to reset all unit standards to current system standards.

Procedure

1. Select the Reset All Unit Standards option from the Default Changes menu.

2. Press the EXECUTE key. The message "Operation in Progress" appears on the screen while the system resets all unit standards to the system standard values.

3. When finished, the message "Operation Successful" appears and the screen returns to the Change Defaults menu. Press the CANCEL key until you return to the WP Plus Peripheral Utilities menu.

CONVERSION UTILITIES

Conversion utilities are programs that perform specific tasks. The following options are available from the Conversion Utilities menu:

- LIS-12/24 Font Auto-Creation
- Single Font Diskette Update (OIS only)
- WP Plus Font Creation
- PostScript Font Sizing Utility

To access the Conversion utilities menu, select the Conversion Utilities option from the WP Plus Peripheral Utilities menu and press the EXECUTE key.

LIS-12/24 Font Auto-Creation

This option takes LPS-12 fonts and transforms them into LIS-12/24 fonts to be stored on a system disk. All printers must be turned off before this function is performed. Because the LIS-12/24 Font Auto-Creation utility automatically runs the WP Plus Font Creation utility (only if a conversion was necessary), you do not have to run the WP Plus Font Creation utility after running the LIS-12/24 Font Auto-Creation utility.

Procedure

1. Select the LIS-12/24 Font Auto-Creation option from the Conversion Utilities menu and press the EXECUTE key.

2. The system displays the message "Calculating Execution Time". During this time, the system is determining what LPS-12 fonts are currently on the system and how long it will take to convert them to the LIS-12/24 format.

3. When the system has determined the time necessary, the message "Approximate Completion Time: xx minutes" is displayed, with the time that is required for conversion. If all the LIS-12/24 fonts are already on the system disk, the system displays the prompt "No Conversion Necessary — Press CANCEL to Return to Previous Menu". In this circumstance, WP Plus Font Creation is not run.

4. If you want to run the conversion at this time, press the EXECUTE key; otherwise, press the CANCEL key to return to the Conversion Utilities menu.

5. When the conversion is completed, the system automatically runs the WP Plus Font Creation utility. At the end of this procedure the screen returns you to the Conversion Utilities menu.

6. Press the CANCEL key until you return to the WP Plus Peripheral Utilities menu.

Single Font Diskette Update (OIS Only)

This function (available on OIS only) updates your font diskettes when a format revision is issued (currently from pre-1.0 revision level to 1.0 revisions). To perform this function, complete the following steps:

Procedure

1. From the WP Plus Peripheral Utilities menu, position the acceptance block in front of the Single Font Diskette Update option and press the EXECUTE key.

2. The system prompt "Mount Diskette to be Updated" is displayed.

3. Mount the font diskette you want to update in the disk drive and close the drive door.

4. Press the EXECUTE key twice.

5. The system displays the message "Update in Progress" during processing.

6. When finished, the system displays the message "Update Completed". It is helpful to mark the diskette as updated and include the date.

7. You are given the choice of updating more font diskettes or returning to the WP Plus Peripheral Utilities menu.

8. If you want to update more font diskettes, press the EXECUTE key and repeat Steps 2 through 6 as necessary.

9. When you finish updating font diskettes, press the CANCEL key until you return to the WP Plus main menu.

Remarks

5577, LPS-12, and LIS-12/24 Single Font Diskettes — Release 1.0 and later can be installed on any OIS system, at any time after all of the peripherals software is installed.

To Convert Pre-1.0 Single Font Diskettes to Level 1.0 for OIS — Run the WP Plus Peripheral Utilities Single Font Diskette Update. VS systems can use pre-1.0 fonts, but pre-1.0 LPS-12 single font diskettes give an error message indicating the font did not install, when in fact it did. This is because it tries to install a comparable LIS-12/24 font. There is no such font on pre-1.0 LPS-12 font diskettes.

To Install Single Font Diskettes on the VS — Run FINSTALL from the command processor. After the font is installed, run the LIS-12/24 Font Auto-Creation utility and the WP Plus Font Creation utility. These utilities create the LIS-12/24 font from its LPS-12 counterpart and create the WP Plus fonts on your system. Release 1.0 or later fonts are recommended for VS systems and are available from WangDirect.

WP Plus Font Creation

This function allows previously installed fonts to be added to the font index. It recreates WP Plus fonts on the system you specify for all font-loadable printers.

You should run the WP Plus Font Creation utility under the following circumstances:

- You already have standard WP fonts on your system and have installed the WP Plus software. Running the WP Plus Font Creation utility converts all standard WP fonts to WP Plus fonts.

- You must rerun the WP Plus Font Creation utility after you have installed (through FINSTALL) new Revision 1.0 fonts on the VS.

- You must rerun the WP Plus Font Creation utility every time you reinstall the WP Plus Peripherals system software in order to update the device font list.

Procedure

1. Select the WP Plus Font Creation option from the Conversion Utilities menu and press the EXECUTE key.

2. The prompt "System: _____" is displayed on the right side of the screen. Press the EXECUTE key. On the VS, do not attempt to alter this field in any way. On the OIS, you can press the NAME key to display an index of all available systems.

3. Press the EXECUTE key to convert the existing fonts to WP Plus fonts. After the utility has completed the conversion, the fonts are listed in the WP Plus Font Indexes and can be used by WP Plus.

WP Plus Postscript Font Sizing Utility

The PostScript Font Sizing Utility automatically adds the new font information to the appropriate font index.

To create new point-size fonts, perform the following steps:

Procedure

1. Select the Conversion Utilities option from the Peripheral Utilities menu and press EXECUTE. The WP Plus Conversion Utilities menu, shown in Figure 4-6, appears.

```
WP Plus Peripheral Utilities — Rel #.#
Conversion Utilities


Make Selection, then Press EXECUTE



- Font Utilities                    ■ LIS-12/23 Font Auto-Creation
- Default Changes                   - WP Plus Font Creation
■ Conversion Utilities              - PostScript Font Sizing Utility
```

Figure 4-6.   WP Plus Conversion Utilities Menu

2.   Select the PostScript Font Sizing Utility option and press EXECUTE. The Route:
     _____ prompt appears.

3.   Enter the route name of the LCS15 and press EXECUTE. The WP Plus Font Selec-
     tion screen, shown in Figure 4-7, appears. The screen lists all the available PostScript
     12-point typographic fonts.

```
WP Plus Peripheral Utilities — Rel #.#
Font Index


Make Selections, then Press EXECUTE      Route: LCS15__

   Family          Size          Density      Slant        National Subset

 _ Times-Roman    12 Point       Regular                    Standard
 _ Times-Roman    12 Point       Bold                       Standard
 _ Times-Roman    12 Point       Regular      Italics       Standard
 _ Times-Roman    12 Point       Bold         Italics       Standard
 _ Helvetica      12 Point       Regular                    Standard
 _ Helvetica      12 Point       Bold                       Standard
 _ Helvetica      12 Point       Regular      Oblique       Standard
 _ Helvetica      12 Point       Bold         Oblique       Standard
 _ Courier        12 Point       Regular                    Standard
 _ Courier        12 Point       Bold                       Standard
 _ Courier        12 Point       Regular      Oblique       Standard
```

Figure 4-7. WP Plus Font Selection Screen

4. Select the font(s) for which you want to generate new-size font files. You should select
    only the font(s) you intend to use since a large font index slows down system process-
    ing time and font indexing.

5. Press EXECUTE. The WP Plus Point Size and Orientation Selection screen, shown in Figure 4-8, appears.

```
WP Plus Peripheral Utilities — Rel #.#
PostScript Font Sizing Utility

Press INSERT to make selections, then Press EXECUTE      Route: LCS15

   Portrait Point Sizes                      Landscape Point Sizes

  _ 6    _ 16    _ 26                        _ 6    _ 16    _ 26
  _ 7    _ 17    _ 27                        _ 7    _ 17    _ 27
  _ 8    _ 18    _ 28                        _ 8    _ 18    _ 28
  _ 9    _ 19    _ 29                        _ 9    _ 19    _ 29
  _ 10   _ 20    _ 30                        _ 10   _ 20    _ 30
  _ 11   _ 21    _ 31                        _ 11   _ 21    _ 31
  _ 12   _ 22    _ 32                        _ 12   _ 22    _ 32
  _ 13   _ 23    _ 33                        _ 13   _ 23    _ 33
  _ 14   _ 24    _ 34                        _ 14   _ 24    _ 34
  _ 15   _ 25    _ 35                        _ 15   _ 25    _ 35
                 _ 36                                      _ 36
■ Create
_ Create/Recreate
```

Figure 4-8.   WP Plus Point Size and Orientation Selection Screen

6. Select the point size and orientation(s) you want the utility to create for the font(s) you selected on the WP Plus Font Selection screen. You should select *only* the point size and orientation(s) you intend to use since a large font index slows down system processing time.

7. Select the Create or Create/Recreate option at the bottom of the screen. When you select Create (the default), the utility creates the new fonts according to your sizing specifications if they do not already exist. When you select Create/Recreate, the utility creates any fonts that did not previously exist and rebuilds any pre-existing fonts that were chosen. The rebuilding process erases any changes you may have made to a font translation table.

8. Press EXECUTE. As the utility creates a new font, status information appears on the WP Plus Point Size and Orientation Selection screen as shown in Figure 4-9.

```
WP Plus Peripheral Utilities — Rel #.#
PostScript Font Sizing Utility

              PostScript Font Sizing In Progress              Route: LCS15

Family              Size          Density       Slant        National Subset
Times-Roman         12 Point      Regular       Italic       Standard

   Portrait Point Sizes                    Landscape Point Sizes

 _ 6      _ 16     _ 26          _ 6        _ 16     _ 26
 _ 7      _ 17     _ 27          _ 7        _ 17     _ 27
 _ 8      ■ 18     _ 28          _ 8        _ 18     _ 28
 _ 9      _ 19     _ 29          _ 9        _ 19     _ 29
 ■ 10     _ 20     _ 30          _ 10       _ 20     _ 30
 _ 11     _ 21     _ 31          _ 11       _ 21     _ 31
 _ 12     _ 22     ■ 32          _ 12       _ 22     ■ 32
 _ 13     _ 23     _ 33          _ 13       _ 23     _ 33
 _ 14     _ 24     _ 34          ■ 14       _ 24     _ 34
 _ 15     _ 25     _ 35          _ 15       _ 25     _ 35
                   _ 36                              _ 36
■ Create
_ Create/Recreate        Point Sizing 32 Portrait
```
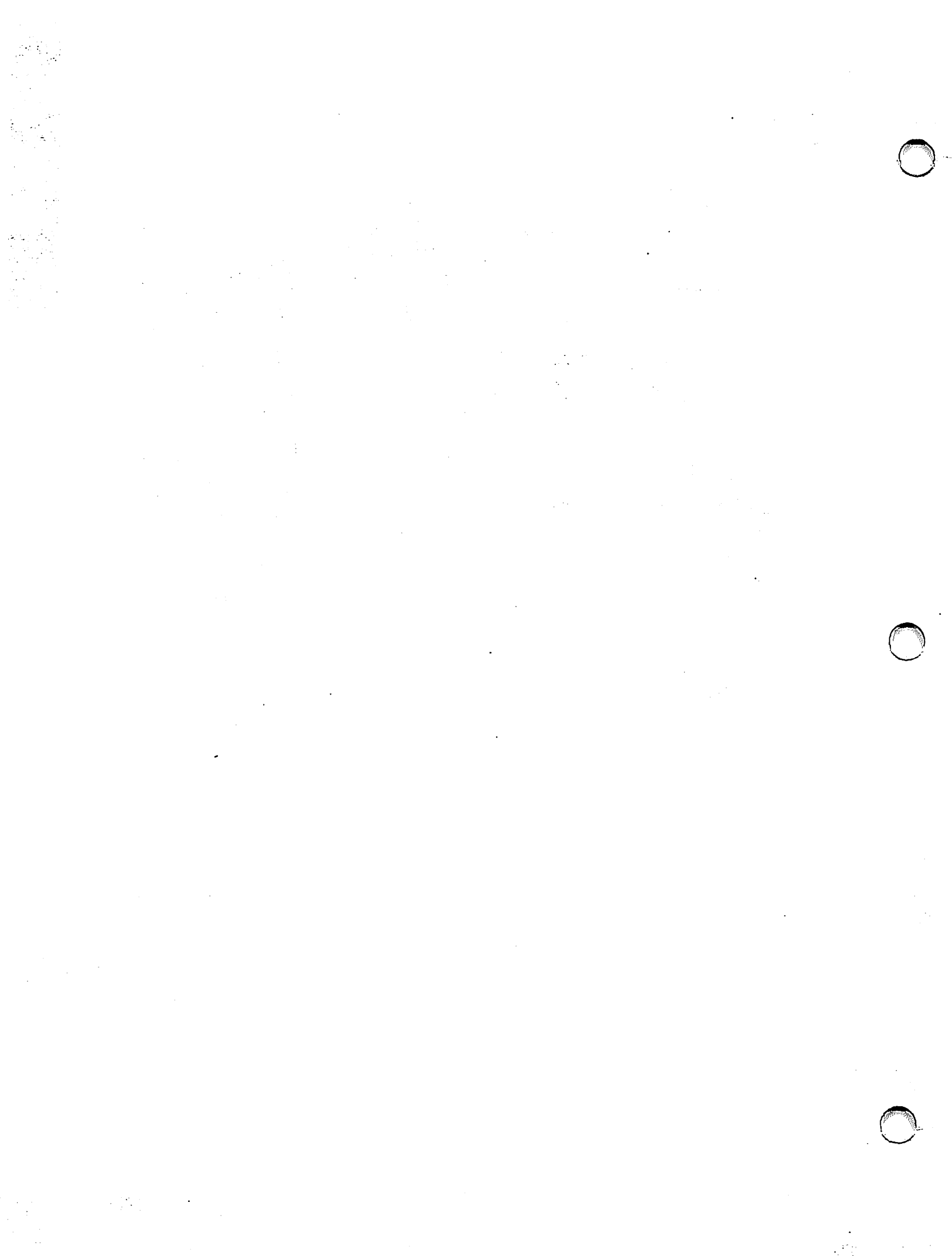
Figure 4-9. WP Plus Point Size and Orientation Selection Screen With Status Information

If you selected the Create option and chose a point size and orientation that already exists, the message "Already exists" appears briefly on the screen. When the font-sizing process is complete, the WP Plus Conversion Utilities menu reappears.

Chapter 5
USING WP PLUS WITH POSTSCRIPT AND LASERJET PRINTERS

INTRODUCTION

WP Plus has the capacity to handle a large number of fonts (up to 99 fonts in a document). PostScript and LaserJet printers print not only in the standard Wang typewriter fonts, but also in a wide variety of typographic fonts. This combination of WP Plus font-handling capabilities and the ability of the PostScript and LaserJet printers to print in typographic and typewriter fonts gives you a great deal of flexibility in the design and layout of a document.

At installation, the default font for the LDP8 is Courier (monospaced) 12-Point Portrait; the default font for the LCS15 is Courier 10 pitch Portrait. (These fonts are approximately equal in size and inter-character spacing.)

This chapter discusses how WP Plus prints on PostScript and LaserJet printers. The chapter explains the following printer concepts:

- WP Plus Font Index
- Portrait and Landscape Printing
- Vertical Line Spacing
- Horizontal Line Spacing
- Style Attributes
- Document Printing
- Graph and Image Printing

In most cases WP Plus prints the same for both PostScript and LaserJet. In those instances where there is a difference, explanations are given for each printer type.

WP PLUS FONT INDEX

The WP Plus font index has a *Size* column that indicates whether the font is sized by pitch or point. If a font has a point size, it is a typographic font. If a font has a pitch size, it is a standard Wang typewriter font.

You can access the WP Plus font index from within a document by using the GO TO and FORMAT keys, or from the main Print menu by using the FORMAT and STYLE keys. Refer to the *WP Plus Reference Guide* for more information.

A sample WP Plus PostScript Font Index screen with both typographic and typewriter fonts is shown in Figure 5-1. The LaserJet Font Index screen is similar but contains some different font selections.

```
WP Plus Font Index

Current default font:
        Family              Size        Density     Slant       National Subset
        Courier             12 Point     Regular                 Standard

Select default font, press EXECUTE

        Family              Size        Density     Slant       National Subset

■      Courier             12 Point     Regular                 Standard
▬      Courier             12 Point L   Regular                 Standard
▬      PrestigeElite       12 Pitch     Regular                 Standard
▬      PrestigeElite       12 Pitch L   Regular                 Standard
▬      Palatino            18 Point     Regular                 Standard
▬      Narrator            10 Pitch     Regular                 Standard
▬      LetterGothic        15 Pitch     Regular                 Standard
▬      LetterGothic        15 Pitch L   Regular                 Standard
▬      Helvetica           06 Point     Regular                 Standard
▬      Helvetica           36 Point     Regular     Oblique     Standard
▬      Times               PS Pitch     Regular     Italics     Standard
▬      Zapf Chancery       24 Point     Medium      Italics     Standard
▬      AvantGarde Book     18 Point     Demi                    Standard
▬      AvantGarde Book     18 Point L   Demi        Oblique     Standard
```

Figure 5-1. Sample WP Plus PostScript Font Index Screen

You can assign a font to a format line (via the WP Plus Format Options menu) or directly to the text and control characters, such as returns and tabs (through the WP Plus Style menu). If necessary, you can assign different fonts to different individual characters. When you assign a font to a format line, WP Plus applies the font to the text that follows until it encounters another format line with a font change. The format-line method of assigning fonts generally increases print speed. Refer to the *WP Plus Reference Guide* for more information.

PORTRAIT AND LANDSCAPE PRINTING

Fonts have either a portrait or a landscape orientation. The portrait orientation is the standard vertical format shown in Figure 5-2. The landscape orientation is the horizontal format also shown in Figure 5-2. The horizontal format is useful for reports or wide tables. If a font uses the landscape orientation, the letter, L appears in its size description in the font index (refer to Figure 5-1).

You can mix portrait and landscape fonts within a document. However, you should not mix the two orientations on the same page.
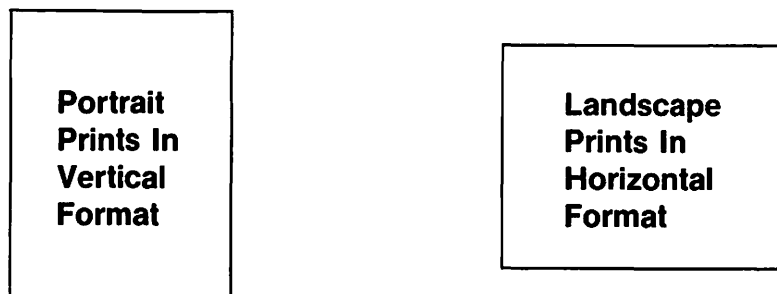
```
┌─────────────┐                    ┌─────────────────┐
│             │                    │                 │
│  Portrait   │                    │  Landscape      │
│  Prints In  │                    │  Prints In      │
│  Vertical   │                    │  Horizontal     │
│  Format     │                    │  Format         │
│             │                    │                 │
│             │                    └─────────────────┘
└─────────────┘
```

Figure 5-2. Portrait and Landscape Orientation

VERTICAL LINE SPACING

The way WP Plus calculates vertical line spacing affects the position of the footer and vertical spacing between lines of text.

WP Plus calculates the vertical line spacing of text differently for typewriter and typographic fonts. Because of the various point sizes in typographic fonts, WP Plus uses a formula instead of the Lines/Inch selection on the Print Default Parameters menu to determine the vertical line spacing for typographic fonts. The formula prevents lines of different point-size text from overlapping one another.

When you mix typewriter and typographic fonts on the same line, WP Plus applies the typographic font-line spacing rules to the typewriter fonts.

Vertical Line Spacing With Typewriter Fonts

Vertical line spacing with typewriter fonts is determined by the 6 or 8 Lines/Inch selection that you make on the WP Plus Print Default Parameters menu (refer to Figure 5-5) or the WP Plus Format Options menu, as shown in Figure 5-3.

Line Spacing	Lines/Inch	Justification	Font
■ Default	■ Default	■ Default	■ Default
_ 1	_ 6	_ None	_ No Change
_ 2	_ 8	_ Partial	_ New
_ 3	_ Leading	Full	
_ 0			
_ 1/4	Leading Amount		
_ 1/2	___		
_ 3/4			
_ 1 1/4			
_ 1 1/2			

The number of lines you can fit on a page depends upon the orientation of the typewriter font, the Lines/Inch selection you make, and the paper size. Refer to Appendix C for the printable lines per page for the different paper sizes.

Vertical Line Spacing With Typographic Fonts

There are two methods of determining the vertical line spacing when using typographic fonts:

- WP Plus Line Spacing Formula
- Leading

WP Plus Line Spacing Formula

WP Plus uses a line spacing formula to determine the vertical line spacing of the text, when you use a typographic font. The formula determines the amount of space from the base of one line of text to the base of the next line of text. The base-to-base line spacing for a typographic font is shown in Figure 5-4.

Note: 36 point text is possible only with PostScript printers. The largest point for the LaserJet printer is 18 point text.

36 point text

is very large. Base-to-base

Figure 5-4. Typographic Font Base-to-Base Line Spacing

The typographic vertical line spacing formula ensures that lines of text with different point sizes do not overlap one another when you use single or larger line spacing. The formula is as follows:

Two-thirds of the maximum point size of the current line plus one-third of the maximum point size of the previous line equals the amount of space from the base of the previous line to the base of the current line when you use single-line spacing (refer to Example 5-3).

The maximum point size is the largest point size of a character or control character, such as a return, on the line. If the previous or current line has only a return on it, WP Plus uses the point size of the return graphic. If you do not assign a font to the return, it has the point size of the default font.

If you have the same point size on two lines and are using single-line spacing, the base-to-base spacing equals the point size of the two lines (refer to Example 5-1).

If you are using line spacing other than single-line spacing, multiply the line-spacing value in the format line times the sum of the two-thirds plus one-third formula. Refer to Example 5-2. The Draft option in the Version field on the Document Print menu doubles the line spacing on a printout and therefore doubles the result of the typographic vertical line spacing formula.

Refer to the following for examples of the typographic vertical line spacing formula.

Example 5-1.   Same Point Sizes and Single-Line Spacing

The size of the text in this line is 12 point.
The size of the text in this line is also 12 point.

2/3 of the current maximum point size (12)   =   8
1/3 of the previous maximum point size (12)   =   +4
$$\overline{12}$$

(The amount of space from the base of the previous line to the base of the current line equals 12 points.)

Example 5-2.   Same Point Sizes and One-and-a-Half-Line Spacing

---

The size of the text in this line is 12 point.

The size of the text in this line is also 12 point.

2/3 of the current maximum point size (12)   =   8
1/3 of the previous maximum point size (12)   =   +4
$$\overline{12} \times 1.5 = 18$$

(The amount of space from the base of the previous line to the base of the current line equals 18 points.)

Example 5-3. Different Point Sizes and Single-Line Spacing

---

36 point size text.

This line of text has 6 point and 12 point size text in it.

2/3 of the current maximum point size (12)   =   8
1/3 of the previous maximum point size (36)   =   +12
$$\overline{20}$$

(The amount of space from the base of the previous line to the base of the current line equals 20 points.)

To illustrate how the order of the sentences affects the line spacing, the sentences in Example 5-3 are reversed in Example 5-4.

Example 5-4. Reversing the Order of the Sentences in Example 5-3

This line of text has 6 point and 12 point size text in it.
36 point size text.

2/3 of the current maximum point size (36)   =   24
1/3 of the previous maximum point size (12)   = + 4
                                                  28

(The amount of space from the base of the previous line to the base of the current line equals 28 points.)

When a line of text includes a typographic font, the selection of 6 or 8 Lines/Inch on the WP Plus Print Default Parameters menu (refer to Figure 5-3) has no effect on the vertical spacing between lines.

The number of lines you can fit on a page depends upon the orientation of the font, its point size, and the paper size. Refer to Appendix A for the printable lines per page for some of the different point sizes.

Leading

Leading lets you modify the space between lines of text for fonts on LCS15 and LDP8 printers. The term leading is a typographic term that refers to the space between lines of print. With Leading you can add a variable amount of space (leading) to improve the readability and general appearance of the text. This type of adjustment is not possible when relying on the WP Plus line spacing formula.

Leading can be added to either a formatted area of a document by adjusting the Leading value on the Format Options menu or to an entire document by adjusting the Leading value in the Print Default Parameters menu. Refer to the *WP Plus Reference Guide* for more information regarding the Format Options and Print Default Parameters menus shown in Figure 5-5.

WP Plus Document Print — ReL. #.#

Press EXECUTE to set print defaults, STYLE to select default font,
CANCEL to reset print defaults

Page Length	66	Page Numbering Style
Footer Line No	54	_ Numeric
Notify Mailbox	_____	_ Upper Case Roman
On System	_____	_ Lower Case Roman

Line Spacing	Lines/Inch	Justification	Paper Orientation
■ 1	■ 6	■ none	■ portrait
_ 2	_ 8	_ partial	_ landscape
_ 3	_ Leading	_ full	
_ 0			
_ 1/4	Leading Amount		
_ 1/2	---		
_ 3/4			
_ 1 1/4			
_ 1 1/2			

Figure 5-5. WP Plus Print Default Parameters Menu

The amount of space that you add between lines is determined by the Leading value you enter and the Line Spacing setting you select. Each point of leading is equal to 1/72 inch. Therefore 12 points of leading is equal to 1/6 inch (12 x 1/72 inch = 1/6 inch), 36 points of leading is equal to 1/2 inch (36 x 1/72 inch = 1/2 inch), and 72 points of leading equals 1 inch (72 x 1/72 inch = 1 inch).

To determine the amount of leading, multiply the Leading value, the fixed number of points that you enter, by the Line Space setting (1, 2, 1/2, etc.). For example, with a Line Space setting of 1, entering a Leading value of 12 would equal 12 points of space between lines of printed text.

Note: Leading value can be any number between 0 and 999. If you enter too small a value, lines of text will overlap. If you enter too large a number, the vertical line spacing can be so great that it runs to the next page.

Example 5-5 shows how adjusting the Leading value can change the amount of space between lines of text.

Example 5-5. Different Leading Values in the Same Point Size Text

```
The size of the text in these three lines is 10 point.
This text has a Line Spacing value of 1 and a Leading value of 12.
Notice the spacing between these three lines.


The size of the text in these three lines is 10 point.
This text has a Line Spacing value of 1 and a Leading value of 14.
Notice the spacing between these three lines.


The size of the text in these three lines is 10 point.

This text has a Line Spacing value of 1 and a Leading value of 16.

Notice the spacing between these three lines.
```

Footer Position

WP Plus calculates the position of the footer based on 6 lines per inch. For example, if you enter 54 as the footer line number, WP Plus prints the footer 9 inches (229 mm) from the top of the paper (54 divided by 6 equals 9). You specify the footer line number in the WP Plus Print Default Parameters menu as shown in Figure 5-5.

Columns

The vertical line spacing in multiple-column text is fixed across each line. WP Plus uses the typographic vertical line spacing formula (two thirds of the current maximum point size plus one third of the previous maximum point size) to determine the base-to-base line spacing. Refer to Figure 5-6 for an illustration of how multiple columns affect the vertical line spacing of the text.

This paragraph is in 12 point. The multiple-column feature in WP Plus is very useful.

This paragraph is in 12 point. The multiple-column feature in WP Plus is very useful.	This paragraph is in 14 point. The multiple-column feature in WP Plus is very useful.	This paragraph is in 18 point. It is the maximum point size in each line in the multiple-colum n format.

Figure 5-6. Vertical Line Spacing in Multiple-Column Printing

Figure 5-6 contains a 12-point paragraph in single-column format and in multiple-column format. Since the maximum point size in the multiple-column format is 18, WP Plus adjusts the line spacing of the 12-point paragraph (and the 14-point paragraph) in the three-column format accordingly.

Superscripts, Subscripts, Double Superscripts, and Double Subscripts

On the PostScript and LaserJet printers, WP Plus places superscripts one third of a line above the standard line and subscripts one third of a line below the standard line. It places double superscripts two thirds of a line above the standard line and double subscripts two thirds of a line below the standard line. WP Plus bases these measurements on the maximum point size in each standard text line and superscript-subscript text line grouping.

As shown in Figure 5-7, a standard text line and a superscript-subscript text line grouping can consist of up to five lines.

Standard^{Superscript}^{Double Super} Standard_{Subscript}_{Double Sub}

Figure 5-7. Standard Text Line and Superscript-Subscript Text Line Grouping

You should use at least one-and-a-half line spacing when your text includes superscript or subscript text. If you use single-line spacing, and subscript text on one line is in the same horizontal position as superscript text on the next line, they may overlap as shown in Example 5-6. Using single line spacing with double subscripts will give you fewer lines on the printed page than expected.

Example 5-6.   Overlapping Superscript and Subscript Text in WP Plus

---

This is standard text$^{\text{superscript text}}$standard text$_{\text{subscript text}}$

This is standard text$_{\text{subscript text}}$standard text$^{\text{superscript text}}$

If you use single-line spacing, text may also overlap when you have

- A 36-point subscript number on one line and a 36-point number on the standard text line below it.

- A 36-point double subscript on one line and a character on the standard text line below it.

On the PostScript and LaserJet printers, WP Plus uses the same superscript-subscript text rule and double superscript-subscript text rule for both typewriter and typographic fonts. This is an instance where typewriter fonts do not function as they do on the LIS-12 or LIS-24 printers.

Zero Line Spacing

When you use zero line spacing, the PostScript and LaserJet printers print each line of text on top of one another. If you are going to use different point-size fonts in the zero line spaced text, put the largest point-size text on the first line after the zero line space format line. (Refer to Example 5-7 where the line with the 3 "X"s is entered first.) WP Plus uses the maximum point size in the first line after the zero line space format line to determine the position of the baseline of the single line of text. It does not adjust the baseline position for different (larger) point-size text on subsequent lines.

Example 5-7.   First Line With the Largest Point-Size Text

This is an example of zero line spacing.

If the largest point size is not on the first line after the format line and the zero line spaced text starts at the top of the page, the PostScript printer may clip the top portions of the characters (refer to Example 5-8), while the LaserJet printer does not print the second line. If the largest point-size text is not on the first line after the format line and text precedes the zero line spaced text, the large point-sized characters may overlap the text above it.

Example 5-8. First Line Without the Largest Point-Size Text

This is an example of zero line spacing.

You can use zero line spacing to overstrike text and to start paragraphs with a "dropped initial." A dropped initial as it appears on the printout and on the screen is shown in Examples 5-9 and 5-10 respectively.

Example 5-9. Dropped Initial With Zero Line Spacing on the Printout

You can use zero line spacing to make the first character in a paragraph stand out from the rest of the text.

Example 5-10. Dropped Initial With Zero Line Spacing on the Screen

```
■
....ou can use zero line spacing to make the first character in◄
■
Y◄
....a paragraph stand out from the rest of the text.◄
```

The first format line uses half line spacing while the second uses zero line spacing.
You may need to experiment with the format line spacing and the number of spaces
that precede the lines of text. After the second sentence, you should switch back to
a nonzero format line. To prevent a third sentence from overlapping the one above,
put a blank line (a line with just a return on it) after the nonzero format line.

Vertical Overflow

When you print pages that contain large point-size text, all the text may not be able to fit
on the page. (Since the screen display does not reflect the point size of the font or the
spacing between the lines, it is difficult to determine if the text can fit on the page when
printed.) If all the text cannot fit on the page, the system prints the overflow text on one
or more additional pages. The overflow text retains the format of the original page.

HORIZONTAL SPACING

Horizontal spacing affects the printable characters per line, the width of the left margin
and format line, and illegal-width conditions.

Printable Characters Per Line

The factors that determine the number of characters that can fit on a single line depend
upon whether you are using a typewriter or typographic font.

Typewriter fonts — The number of characters that fit on a single line depends upon the
pitch size, the orientation of the font (portrait or landscape), and the printable-width
area of the paper. For example, if you use a 12-pitch font on letter-size paper —
printable-width area of 8 inches (203 mm) — you can fit 96 characters on a line
(12 times 8 equals 96).

Refer to Appendix C for the number of characters per line for different pitch, orienta-
tion, and paper-width combinations.

Typographic fonts — The number of characters that fit on a single line depends upon the typographic font you use, its point size, orientation of the font, and printable-width area of the paper. The larger the point size, the fewer characters you can fit on a line. Refer to Appendix B to see how the widths of characters differ in the typographic font families. Refer to Appendix A for an explanation of proportional spacing with PostScript and LaserJet printers.

Format Line

The pitch WP Plus uses to calculate the width of the format line depends upon whether you use a typewriter or typographic font.

Typewriter fonts — WP Plus uses the pitch of the font assigned in the WP Plus Format Options menu (refer to Figure 5-3) to determine the width of the format line. For example, if the font is Courier 10 pitch (10 characters to the inch), each space in the format line is equal to 1/10 inch (3 mm). If a format line has a PS pitch font assigned to it, WP Plus defaults to 12 pitch. If a format line does not have a font assigned to it, WP Plus uses the default font of the document. You select the default font through the WP Plus Print Default Parameters menu (refer to Figure 5-5).

Typographic fonts — WP Plus uses 12 pitch (12 characters to the inch) to calculate the width of the format line. As a result, each space in the format line always equals 1/12 inch (2 mm) no matter what size typographic font is assigned. Refer to Appendix A for a detailed explanation of calculating the width of the format line.

Left Margin

The pitch WP Plus uses to calculate the width of the left margin depends upon whether you use a typewriter or typographic font as the default font.

Typewriter fonts — WP Plus uses the pitch of the default font and the left margin you specify on the WP Plus Document Print menu (refer to Figure 5-8) to calculate the width of the left margin. To calculate the width of the left margin, divide the left margin by the pitch. For example, if you specify 10 as the left margin and the default font is 12 pitch, the width of the left margin equals 10/12 or 5/6 inch (21 mm).

Typographic fonts — WP Plus uses 12 pitch and the left margin you specify on the WP Plus Document Print menu (refer to Figure 5-8) to calculate the width of the left margin. To calculate the width of the left margin, divide the left margin by 12 pitch. For example, if you specify 10 as the left margin, the width of the left margin equals 10/12 or 5/6 inch (21 mm).

Note: All Laser printers automatically leave approximately a 1/4-inch left margin. As a result, you should add 1/4 inch to the width you calculated to get the actual width of the left margin. For example, 5/6 inch (21 mm) plus 1/4 inch (6 mm) equals 1 1/12 inches (28 mm).

Illegal-Width Conditions

WP Plus uses the left margin and the format line to determine whether an illegal-width condition exists. If the combined width of the left margin and the format line exceed the printable-width area of the paper, you may get an illegal-width condition.

Note: *If you attempt to print characters in this area, the LCS15 and LDP8 (and all Laser printers except the LPS12) print the words, Illegal Width, on the page and terminate the printout.*

For example, assume you are using a typographic font and letter-size paper that has a printable-width area of 8.00 inches (203 mm). If your left margin value is 10, its width equals 5/6 inch (21 mm). (WP Plus uses 12 pitch to calculate the width of the left margin for typographic fonts.) If your format line is 90 spaces long, its width equals 7 1/2 inches (191 mm). (WP Plus uses 12 pitch to calculate the width of the format line for typographic fonts.) The combined width equals 8.33 inches (212 mm) which exceeds the 8.00-inch (203-mm) printable-width area. When you attempt to print characters in the area that exceeds the printable-width of the paper, an illegal-width condition results.

STYLES

The PostScript and LaserJet printers support all the WP Plus style attributes. Table 5-1 lists the printed result of each style attribute.

Table 5-1. WP Plus Styles Supported by PostScript and LaserJet Printers

Style Assigned	Printed Result
Underscore	Underscores the text. If one or more typographic fonts are in the underscored region, the thickness and position of the underscore are based on the maximum point size.
Double underscore	Double underscores the text. If one or more typographic fonts are in the double-underscored region, the thickness and position of the double underscore are based on the maximum point size.
Diacritic	Prints the appropriate accented character or mark.
Bold	Prints boldface (darkened) text.
Font	Prints the text in the specified font if it is supported on the print route. If you specify a font that a print route does not support, the printer uses a font that is a close match.
Superscript	Prints superscript text slightly above the standard text line.[a]
Subscript	Prints subscript text slightly below the standard text line.[a]
Double Superscript	Prints double-superscript text slightly above the superscript text line.[a]
Double Subscript	Prints double-subscript text slightly below the subscript text line.[a]
Option	Prints optional text if you select the appropriate option from the Print menu.
Hyphen	Hyphenates the word if it appears at the end of a line.
No break	Prints the text on the same line.

[a]Refer to the section entitled "Vertical Line Spacing" earlier in this chapter for more information.

(continued)

Table 5-1. WP Plus Styles Supported by PostScript and LaserJet Printers (continued)

Style Assigned	Printed Result
Strike thru	Overstrikes the text with slashes (use the WP Plus Peripheral utilities to change the strike thru character). The size of the strike thru character corresponds to the point size of the font.
Redline Insert	Double underscores the new text and puts change bars in the right margin when you select All Marks on the WP Plus Document Print menu. If you select Change Bar Only, the LCS15 and LDP8 do not underscore the text.[b]
Redline Delete	Puts change bars in the right margin and applies the strike thru style to the text to which you applied the Redline Delete style.[b]

[a]Refer to the section entitled "Vertical Line Spacing" earlier in this chapter for more information.

[b]The change bar character is not available in some of the typographic fonts as hexadecimal code 86. If you use one of these fonts and want to generate the change bar character, you must assign it a valid hexadecimal character code. Refer to Appendix B to see the encodings of the different fonts.

Differences in Styles on Typographic Fonts

The PostScript and LaserJet printers react differently when applying certain styles to *typographic* fonts. The following sections describe these differences.

Bold

PostScript and LaserJet Printers — PostScript and LaserJet printers print text with the bold style as bold text. They do not support expanded bold print. If you use typographic fonts, the density of the bold text varies depending upon the point size of the text. When you use large point-size text, the bold characters are only slightly darker than the regular text. If you want to emphasize the difference between the bold and regular large point-size text, select a bold font from the font index instead of the bold style.

Underscore and Double Underscore Using the PostScript Printer

PostScript printers print an underscore or a double underscore just below the baseline of the text. If a character has a descender, it overlaps the underscore or double underscore.

Typewriter fonts — The thickness of the underscore and double underscore remains the same regardless of the pitch size of the typewriter font.

Typographic fonts — The thickness of the underscore and double underscore is based on the maximum point size in the region you select for the style attribute(s). The larger the point size, the thicker the underscore or double underscore. If a line has text in different point sizes, the underscore or double underscore may appear farther away from the smaller-point size text since WP Plus bases its size and position on the largest-point size on the line as shown in Example 5-11.

underscore 12 point text

underscore 12 point text **36 point text**

Underscore and Double Underscore Using the LaserJet Printers

LaserJet printers print an underscore or a double underscore just below the baseline of the text. If a character has a descender, it overlaps the underscore or double underscore.

The thickness of the underscore and double underscore is the same for both typewriter and typographic fonts. The thickness remains the same regardless of any change to the pitch size of a typewriter font or to the point size of a typographic font.

Strike Thru

For the PostScript and LaserJet printers, the size of the strike thru character depends upon the size of the character. The larger the text, the larger the strike thru character as shown in Example 5-12.

Example 5-12.   Strike Thru Style on Typographic Fonts in WP Plus

strike thru 12 point text **36 point text**

PRINTING DOCUMENTS

When you use PostScript and LaserJet printers, you print documents the same way you do with any other printer WP Plus supports. However, when you print WP Plus documents, you should take into account the special considerations that follow.

WP Plus Document Print Menu

You use the WP Plus Document Print menu, shown in Figure 5-8, to issue print requests.

```
WP Plus Document Print — Rel. #.#

Press EXECUTE to print, FORMAT to change print defaults,
STYLE to merge print, RECALL to start again.


Title:  Chapter 1 Reference Guide                      Id:       3
Pages: 18                                              Library: 1

Route:     _____           Left Margin:              __
From Page: 1_____        Starting as page number: 1_
To Page:   8_____        Starting as line number: 1_
Copies:    1_                 Number Every __ Lines



Forms           Version     Summary         Line Numbers    Delete
■ Continuous    ■ Final      _ Omit          ■ Omit          ■ No
_ Standard      _ Draft      ■ Print         _ Print         _Yes
_ Form1
_ Form2         Footnotes   Optional Text   Restart Line #  Redlining
_ Envelope      ■ Omit       ■ Omit          _ Yes           ■ Omit
                _ Print      _ Print         ■ No            _ Change Bar Only
                                                             _ All Marks
```

Figure 5-8. WP Plus Document Print Menu

Consider the following points when you fill in the fields on the WP Plus Document Print menu:

Route — Use the print route assigned to the PostScript or LaserJet printer.

Left Margin — Refer to the section entitled "Horizontal Spacing" earlier in this chapter for information on how the system calculates the width of the left margin.

Form for LCS15 — The LCS15 printer reacts to the Forms options as follows:

Continuous — The LCS15 uses the upper paper tray until it is empty and then automatically switches to the lower paper tray. If the Paper Change option in WP Plus Peripheral utilities is set to Manual, the upper and lower paper trays must be the same size when you select Continuous as the Forms option.

Standard — If you print the document summary, the LCS15 uses the upper paper tray to print it and then uses the lower tray to print the first page of the document. It then uses the upper tray to print the rest of the document.

If you omit the document summary, the LCS15 uses the lower paper tray to print the first page of the document, and then uses the upper paper tray to print the rest of the document.

When you select Standard as the forms option, the upper and lower paper trays must be the same size.

Form1 — All paper comes from the lower paper tray.

Form2 — All paper comes from the upper paper tray.

Envelope — LCS15 does not support the printing of envelopes. If you select this Forms option, it uses the upper paper tray.

Form for LDP8 — The LDP8 printer reacts to the Forms options as follows:

Continuous — The LDP8 uses all pages from the paper tray until it is empty and then needs to be refilled.

Standard — The first page comes from the manual feed (each page inserted individually) and the remaining pages come from the paper tray.

Form1 — All pages come from the manual feed; each page has to be inserted individually.

Form2 — All pages come from the paper tray (same as continuous).

Envelope — Envelopes come from manual feed; each envelope has to be inserted individually.

Version — The Draft option doubles the vertical line spacing of the text in a document.

Summary — WP Plus prints document summaries in Courier 10 point.

WP Plus Print Default Parameters Menu

Consider the following points when you fill in the fields on the WP Plus Print Default Parameters menu (refer to Figure 5-5):

Page Length — Enter the value that corresponds to the paper size you are using. The tables in Appendix C list the valid page length entries for the different paper sizes.

Lines/Inch — The 6 or 8 lines per inch options only apply to typewriter fonts; typographic fonts are controlled by the typographic vertical line spacing formula. The Leading option lets you add points of space between lines of printed text for typographic fonts.

Paper Orientation — Each font has either a portrait or a landscape orientation. As a result, this option has no effect on how the PostScript or LaserJet printer prints the document.

Print Screen

When you use the Print Screen function (the COMMAND key followed by the p key), WP Plus uses the Default Text Font assigned in the Default Changes Utility. Before you use Print Screen, make sure that the Default Text Font is either a fixed-pitch typewriter font or a monospaced typographic font and is small enough that the information on the screen can fit on the page. For example, assign a 15-pitch landscape typewriter font or Courier 8 point as the Default Text Font.

Printing a Library Index

When you print a library index, WP Plus uses the Default Text Font assigned in the Default Changes Utility. Refer to the previous section entitled "Print Screen" for Default Text Font requirements.

Printing a Log

When you print a filing log, WP Plus uses the Default Text Font assigned in the Default Changes Utility. Refer to the section above entitled "Print Screen" for the Default Text Font requirements.

PRINTING GRAPHS

The LCS15 printer supports the following graphics applications:

- CHARTER
- VS Graphics Facility (VSGF)
- VS 20/20
- Wang VDM files

The LaserJet printer does not support the printing of these graphic applications.

Charter

You can print CHARTER output directly from the CHARTER graphics application or as a graph reference in WP Plus. In addition to the existing stroke fonts, CHARTER supports two of the LCS15 typographic fonts: Times Roman and Helvetica.

CHARTER supports only 8.50- x 11.00-inch (216- x 279-mm) paper. As a result, if one of the paper trays does not have letter-size paper in it, the LCS15 automatically switches to the letter-size paper tray, regardless of the Forms option you select on the Print Graph screen. Refer to the section entitled "WP Plus Document Print Menu" in this chapter for a description of how the LCS15 reacts to the different Forms options. The Standard option in the Forms field of the Print Graph screen is equivalent to the Standard option in the Forms field of the WP Plus Print Document menu when you omit the summary.

VSGF

You can print VSGF charts on the LCS15. However, VSGF cannot use the typographic fonts the LCS15 provides. The LCS15 output is similar to that of the LIS-12. Refer to the *VS Graphics Facility Reference Manual Vol. 1 (Basic Functions)* for the different printing methods.

VS 20/20

You can print VS 20/20 spreadsheets and graphs on the LCS15 printer. The LCS15 output is similar to that of LIS-12. Refer to the *VS Wang 20/20 User's Guide* for information on the print commands.

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WP PLUS

Section II

VS/IIS and OIS WP Peripherals Software

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VS/IIS AND OIS WP

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INTRODUCTION TO VS/IIS AND OIS WP PERIPHERALS SOFTWARE

OVERVIEW

Section II contains information that you need to run peripherals software in order to print WP documents on the VS and OIS.

The chapters in this section contain the following material:

Chapter 1 — Provides an overview of the contents of this section and a section that outlines the steps you follow in order to connect the printers to your system.

Chapter 2 — Lists the features that are supported on each printer and the types of files that can be printed using Peripheral software.

Chapter 3 — Presents the special considerations that you should be aware of when you use the printers and utilities.

Chapter 4 — Describes the procedures you need to follow in order to run the WP utilities.

Chapter 5 — Describes the features of the PostScript and LaserJet printers.

GETTING STARTED

The peripheral software controls your printers. Before you can print from a printer that is connected to your system, you have to make sure that the peripheral software is installed and configured properly.

This section presents the steps you must perform in order to start the printers running and refers you to other chapters in this book and to other appropriate documents that contain the required procedures.

The following list presents the procedures you perform to get the printers up and running.

- Install the Peripherals Software Packages
- Install additional fonts
- Configure if new installation or new printers (VS only)
- Running necessary utilities

Installing Peripherals Software

Installing the VS/Integrated Information Systems (IIS) peripheral software package requires you to run the BACKUP utility to install the following software:

- VS/IIS Emulator software (only if not installed with editor)
- Peripheral System software
- Peripheral Software
- Peripherals Utilities

Refer to the Customer Software Release Notice (CSRN) that accompanied your software for the procedure to install the software.

Installing the Office Information Systems (OIS) peripheral software includes installing the following packages:

- Control Functions
- Peripherals System Software
- Peripherals Software
- Peripherals Utilities

Refer to the CSRN that accompanied your software for the procedure to install the software.

Installing Additional Fonts

When you install the Peripheral software package only the default fonts are installed. Additional fonts for VS/IIS and OIS WP are supplied on diskettes. Additional fonts for VS/IIS and OIS WP are supplied on diskettes. Refer to the CSRN that accompanied your software for the procedure to install additional fonts on the VS and the OIS.

Configuring the Printers on the VS

You configure printers on the VS when you are either performing the initial installation or adding a new printer. Configuring the printers involves assigning ports and printer numbers. Refer to the *VS System Administrator's Reference Guide* for the procedure to configure printers.

Running WP Peripheral Utilities

With the peripherals software and any additional fonts installed, you are now ready to run the necessary utilities. Refer to Chapter 4 for the procedures to run utilities.

Following is a brief description of each of the peripheral utilities:

LIS-12/24 Font Auto-Creation Utility — If you have installed these printers, then you should run the Font Auto-Creation utility (accessed through the Peripherals Utilities menu) to convert LPS-12 fonts to the LIS-12/24 format.

WP Font Regeneration Utility — After installing the VS/IIS and/or OIS peripherals software and additional fonts, run the WP Font Regeneration utility to rebuild the WP font index and to add the fonts to it.

Character Set Utilities — Run the Character Set utilities to assign the Character set numbers that let you choose fonts for a specific printer.

PostScript Sizing Font Utility — If you have an LCS15 printer, you may want to run the Postscript® Sizing Font utility to create various point sizes for fonts.

Note: IPL the system after you run the utilities.

Printing Files

With the fonts assigned, you are ready to print files. Create a document in VS/IIS or OIS WP and send it to the printer.
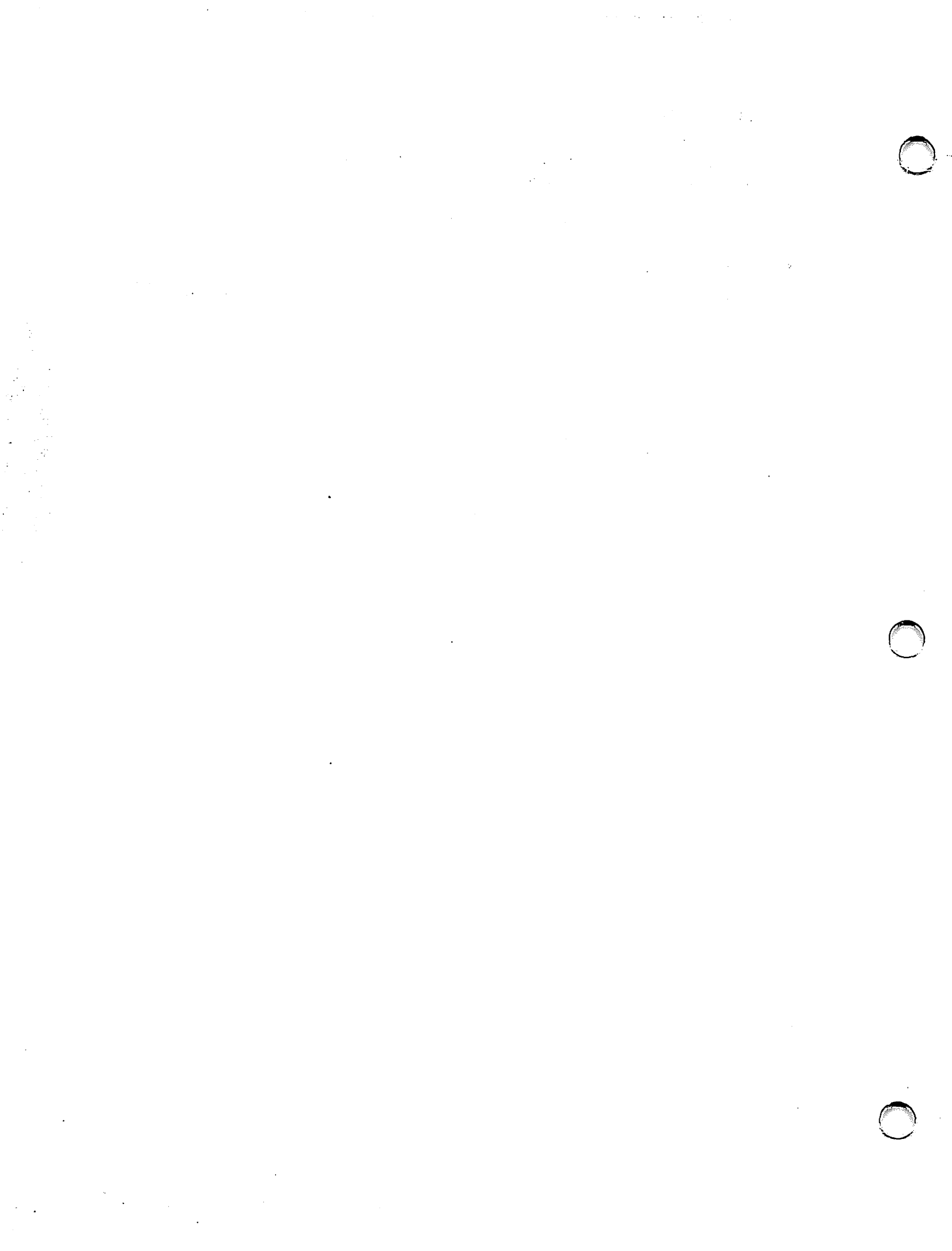
Chapter 2
VS/IIS AND OIS WP PERIPHERALS SOFTWARE PRINTING FEATURES

OVERVIEW

This chapter lists the types of files that are supported by VS/IIS and OIS peripherals software as well as the features that are available for printing word processing documents.

FILES SUPPORTED BY VS/IIS AND OIS PERIPHERALS SOFTWARE

The following files can be printed by using VS/IIS and OIS peripherals software:

- VS/IIS Documents
- OIS WP Documents
- Text Files
- PIC™, the Wang image processing system, Images and Graphs (LIS-12/24 only)

Note: Printing IWP documents requires printers with at least 64 kilobytes (KB) of memory. Refer to the table in Section I of this guide for a list of printing devices supported by VS/IIS and OIS peripherals software.

WORD PROCESSING PRINTING FEATURES

The VS/IIS and OIS peripherals software offer the following word processing printing features. They are presented here with a brief description of each.

Proportional Space Printing

Proportional space printing is supported on all printers.

Proportional spaced printing is printing in which each character is assigned a specific amount of space based on its general character measurements. For example, look at the following two lines of text.

The quick brown fox jumps over the lazy dog.

The quick brown fox jumps over the lazy dog.

The first line is printed in a fixed-pitch typewriter font. Notice that each character is printed in the same amount of space.

The second line is printed in a proportionally spaced typographic font. Notice that each character is allotted a different amount of space; in the word "quick" the letter "c" occupies more space than the letter "i." Refer to Appendix A for a detailed explanation of proportional spaced printing.

Dual Columns

Dual column printing is supported on all printers.

The dual column feature enables you to create a single column of text, either in one or two documents, and to print the text in two parallel columns. These two columns can be edited, with lines deleted or inserted, and still maintain proper alignment when printed.

For example, you can maintain a list of addresses and phone numbers that can be updated by adding or removing names and still maintain the paragraph alignment as seen in the following list:

John Davidson	Tom Kennedy
101 Main St.	Apt 12
Groton MA 18723	43 Pleasant Rd.
	Updike NH 42389
Bill Thomas	Alice Johnston
607 East St.	413 South St.
Williams MA 31529	Lowell MA 01851

Merge Print

Merge printing is supported on all printers.

Merge print enables you to combine standard text with variable text to create a personalized document. For example, you can create a standard letter in one document and create variable information, such as the address, name, and company references, in another document and combine them both to print one personalized letter.

Typewriter Printing

Typewriter printing is supported on the 6581W and DW/OS-55 printers.

Typewriter printing (available on OIS only) enables you to print a document while you type as if you were typing on a typewriter. This feature is convenient when you want to print a memo or envelope quickly.

Strike Thru

Strike thru is supported on the LM400/700/900, 6581W, DW/OS-55, DW/OS-60, 5577, 5578, LIS-12/24, LCS15, LDP8, and LPS8 printers.

The Strike thru feature enables you to strike through text or numbers of any font with slashes. The following example illustrates strike thru:

This line contains the ~~strike thru~~ feature.

To apply the strike thru feature, enter two subscript characters (press the Down ↓ arrow key), one before and one after the text you want to strike through, and then underscore both the arrows and the text.

Bold Print

Bold printing is available on all printers.

The Bold Print feature prints characters in heavy type. The following line contains bold print:

This line contains the **bold** print feature.

Bold and expanded print can be combined to create headings and titles in a document. You can underscore the bold or expanded text and can combine bold or expanded print with standard print on the same line.

To apply bold print, enter an underscored superscript character (press the Up ↑ arrow key) before and after the text you want to appear in bold or expanded print. If you want multiple lines of text to appear in bold or expanded print, you must enter the underscored arrow on each line of the text.

Expanded Print

Expanded printing is supported on the LPS-12 and LIS-12/24 printers.

The expanded print feature prints characters double the height of standard characters. The following line contains expanded print:

This is an example of expanded print.

Expanded print is treated as two lines by the printer. If you enter expanded print on the last printable line, the line prints on a separate sheet with the footer, before the remainder of the job prints.

You can combine bold and expanded print to create headings and titles in a document. You can underscore the bold or expanded text and also combine bold or expanded print with standard print on the same line.

To apply expanded print, you first select the Bold option and/or the Expanded option from the Print Parameter Alterations menu (for Unit Standards) in Peripheral Utilities (refer to Chapter 4 for the procedure to access this menu). When you type the text, enter an underscored Up ↑ arrow before and after the text you want to appear in bold or expanded print. If you want multiple lines of text to appear in bold or expanded print, you must enter the underscored Up ↑ arrow on each line of the text.

Subscripts and Superscripts

Subscripts and superscripts are supported on all printers except the LPS-12.

Subscripts and superscripts are characters that print in the same size as standard text but are shifted up or down a slight amount from the baseline. Any character in the font can be used as a subscript or superscript. The following line contains a subscript and a superscript:

Subscript standard baseline superscript

To print subscripts, press the Down ↓ arrow key, type the text to be subscripted, then press the SHIFT and the Up ↑ arrow key.

To print superscripts, press the SHIFT and the Up ↑ arrow key, type the text to be super-scipted, then press the Down ↓ arrow key.

Note: The LPS-12 prints script characters, by using a modified font, at approximately one-half the standard character height and shifted up or down from the baseline.

Line Spacing

Whole line spacing is supported on all printers; fractional line spacing is supported on all printers except the LPS-12.

Line spacing can be whole line spacing such as, 1, 2, 3, or fractional line spacing, such as 1/4, 1/2, and 1 1/2. To apply line spacing, you enter the value at the left of the format line. For whole line spacing, enter 1, 2, or 3. For fractional line spacing enter Q (1/4), H (1/2), or W (1 1/2). If you enter 0 for the line spacing value, the text overstrikes the previous line.

Using Stop Codes to Change Fonts

All printers except line printers allow you to use Stop codes to change fonts.

The Stop code allows you to leave a reference graphic (■) in the document to alert the printer to switch between the primary and alternate character set or font.

You can have two fonts of any pitch (10, 12, 15, and proportional spacing) or any orienta-tion (portrait/landscape) on a page or in a document. The following line contains two different fonts:

This line contains regular and *italicized fonts.*

Do not print fonts of different pitches on the same line — it may cause incorrect spacing. If you combine pitches on the same line when you are printing on the LIS-12/24, the message "Illegal Width. Printout terminated by system" appears and the print job aborts. Also, do not combine fonts with different orientations on the same line.

To print text with an alternate character set or font, enter a reference graphic before and after the text to be printed. When a daisy printer encounters the reference graphic, the printer stops so you can change the print wheel. When the printer encounters the next reference graphic, you must change back to the primary print wheel. With font-loadable devices, the printer automatically alternates fonts without stopping.

Underscored Stop Code

The underscored Stop code is supported on all printers except the LDP8.

The underscored Stop code is used on font-loadable printers to stop the printer to change the paper. When a laser printer encounters an underlined Stop code, it stops printing for approximately 10 minutes and resumes printing again if no operator intervenes.

Typographic Fonts

Typographic fonts are supported on the LCS15 and LDP8 printers.

Variable point size, proportionally spaced fonts are supported in VS/IIS and OIS WP peripherals for the LCS15 and LDP8 printers. Refer to Chapter 5 for more information on printing with typographic fonts. Appendix A explains formatting with proportional space fonts.

VS/IIS AND OIS WP

Chapter 3
SPECIAL CONDITIONS AND RESTRICTIONS FOR VS/IIS AND OIS WP PERIPHERALS

OVERVIEW

Chapter 3 describes the conditions and restrictions for VS/IIS and OIS peripherals. The conditions and restrictions are listed in alphabetical order, according to their identifying title, for each printer. Probe numbers are included wherever applicable. Probe numbers are assigned to comments concerning the operation of the software; these numbers provide a basis for tracking the comments.

ALL PRINTERS

The following conditions and restrictions apply to all printers.

Conditions

Character Sets

Meaning

The printer always uses the primary character set when it begins printing a new page even if a secondary character set was in effect on the previous page.

Procedure

Enter a stop code at the beginning of the new page to continue using the secondary character set.

Draft Mode

Meaning

The printer may stop before the end of each page if a document does not have a footer and you print it in Draft mode.

Procedure

Enter the number of lines per page in the Footer Starting Line field of the Print menu to continue printing to the end of each page even though there is no footer.

Footer

Meaning

The printer releases an extra sheet of paper after each page if a footer contains a return and the document is queued to print in Draft mode.

Procedure

Remove the return from the footer on all printers (except the LPS-12).

No action is necessary on the LPS-12. To correct the Footer condition on the DW/OS-20, turn the printer off and then turn it on again.

Header

Meaning

The header does not print in the correct location if it is single-spaced and the previous page ends with double spacing.

Procedure

Include a single-spaced format line ending with a return character at the end of the previous page.

Line Feed

Meaning

The printer generates one less line feed than requested if there is a control code Hex (0A) in a Text file but there is no text on the line preceding the control code.

Procedure

Precede the control code with text.

Line Width

Meaning

Format lines are associated with pitch values. When you insert a format line, it has the pitch value that is in effect at that location.

The printer calculates the width of a line by multiplying the number of spaces in the format line by the width of a space for that pitch.

Procedure

Insert a new format line when you change the pitch. Do not change the pitch in a header or footer.

Overflow

Meaning

Overflow text does not justify correctly if you change the pitch from Page 1 to Page 2 and the text overflows to Page 3.

Procedure

Move the page break or reformat the document to prevent overflow.

Page Counter

Meaning

The page counter restarts at number :000 after the printer prints page 999.

Procedure

None.

Print Menu

Meaning

An invalid entry on a Print menu, such as a page length of zero or print page zero, causes adverse results. For example, a blank page may print or the daisy printer may lock.

Procedure

If the printer locks, turn it off and then turn it on again.

Print One Line per Page

Meaning

The lines of text print on top of each other on the page if you specify a page length of 1 on the Word Processing Print menu.

Procedure

Insert a page break after each line if you want to print one line per page.

Scripts

Meaning

The printer prints the superscript, a line of text, and then the subscript if a line has superscripts or subscripts.

The next line with a subscript following a format line that has different line spacing prints incorrectly because daisy and matrix printers move paper only in the forward direction.

Procedure

Use quarter or half line spacing for the desired printout.

SELECT Key

Meaning

The printer may stop functioning if you repeatedly press the SELECT key.

Procedure

Turn the printer off and then turn it on again if it stops functioning.

Stop Codes

Meaning

Adverse results may occur on some printers if you print a document that contains stop codes (used to call up font changes) and you do not specify two character sets in the Print menu.

Procedure

Specify two character set numbers in the Print menu.

Tabular Text

Meaning

Text does not print correctly if a Text file contains tabular text and there is a left margin.

Procedure

Set the left margin at zero.

Text Files

Meaning

The printer may deselect many times before printing when it is printing Text files if you select Standard in the Forms field of the Print menu.

Procedure

Select Continuous in the Forms field.

Zero Line Spacing

Meaning

Lines of text in Word Wraparound mode print one after the other rather than overlaying each other if you specify a line space of zero in the format line.

Procedure

Press the RETURN key at the end of each line if you want a line spacing of zero.

Restrictions

Blank Lines — The printed page may not format correctly and text may shift upward if a page has numerous blank lines. For example, if a page has text only on lines 1 and 67, the text in those two lines prints on the same line.

Canceling an Active Print Job — A printer (e.g., Models LPS8, LPS-12, LIS-12/24, LCS15, LDP8, PM015, PM019) that stores text may be slow to respond if you cancel a printout while it is printing.

Centering in a Document — Text centers between the tab and the end of the line if you enter a tab in a document and then center the text.

Centering Text — Centered text is off to the left by one character.

Continuous Forms — The printer prints one page and stops with a "Change Paper" message when you print with a Ziyad feeder in Tilt-Back mode. When you press the SELECT button, the printer prints the first line of the next page on top of the last line on the previous page. (Probe Number F400083)

Control Code — Text file control code Hex (0A) issues one less line feed than requested if there is no text preceding it on the same line.

Decimal Alignment — Decimal alignment is not supported in superscripts or subscripts.

Differences in Printer Output — Printed output may not look exactly like the display screen due to differences in the printer fonts and hardware. This is especially true if a line has control codes, such as superscripts, subscripts, or notes, or if you hyphenate or globally hyphenate a document before printing it.

Double Underscore — Double underscore does not carry over to print on the next line of continuous text.

Dual Column and Summary — The Pages To Be Printed field is not accurate on the Summary page when you send a single document to print using Dual Column and request a Summary page.

Dual Column Printing With Scripts — When printing columns with scripts, if 2 spaces occur at the end of a line, and the following line begins with a script, the script will be indented one space when printed.

Dual-Sheet Feeder — Use the paper tray in Bin 2 when you print Landscape style on standard or DIN A4 paper.

Erroneous Message — The message "Sorry - Font file cannot be installed on the system" appears when you run FINSTALL and install 5 1/4-inch (133-millimeter) fonts on the Central Drive. This message is erroneous: The fonts do get installed on the system. (Probe Number F009795)

Half Line Spacing with Superscripts — When printing half line spacing with superscripts, if the first word in a line of text is a superscript, it will print on the baseline while the rest of the line appears to print as subscript.

Justification and Mixing Fonts — In a document that requires a printout with 2 fonts, if the primary character set is a proportionally spaced font and the second character set is a pitch font, text will not justify properly. This occurs only when selected text within a line calls for a font change.

Line Calculations — The printer uses six lines per inch even if you specify eight lines per inch to calculate the paper length and the line where the footer begins.

Lines per Inch — The number of lines per inch printed is the same whether you select six or eight lines per inch if you specify line spacing of less than single line spacing in the format line (such as 0 for zero line spacing, Q for quarter line spacing, or H for half line spacing). (If you specify a line space value of 1 or greater, the number of lines printed per inch depends on whether you select six or eight lines per inch.)

Line Width — Unexpected results may occur if the width of a line on the screen differs from the width of a line on a printed page and you request double underscoring or overstriking. (Format lines control screen width, and the paper size controls page width.)

Merge Print — The printer releases blank pages when you are merge printing if you specify a page number higher than the number of variables.

Overflow (page) — The document formatting may disrupt when text overflows to another page.

Overflow (text) — The overflow text prints six lines per inch if you request eight lines per inch in the Print menu and there are too many lines to fit on a page.

Overstrike — Text is underlined rather than struck through if the text marked for overstrike continues over to the next line which does not end with a return.

Paper Jams — A page of text may not print if there is a paper jam on a laser printer.

Printing Part of a Document in Dual Column — The queue accepts the job but the document does not print if you send part of a document to print in Dual Column and the starting page is beyond the middle page. If you go back into the queue, it shows the queue empty. (Probe Number F008074)

Proportional Space — A character may be lost in a proportionally spaced document if the following unusual conditions exist:

- Two lines are separated by a word break and the second line has no word breaks and exceeds the format line length.

- The width of the last character on the line exceeds the width of the word break.

- The remaining space on the line is less than the width of a word break.

    Place a RETURN in the document at the word break preceding the lost character to correct any of these conditions.

Stop Codes — Character printers may deselect before printing footers or the second column of a dual column print request if a document contains stop codes.

Subscripts — If there is subscripted text on line 64 of an 11-inch (279-millimeter) page, the text overflows to the next page.

Superscript and Subscript Arrows — The arrows seen on the screen do not occupy space on the printed document when you use superscript and subscript.

Superscripts — The number of lines that fit on a printed page is limited by the amount of space the printer reserves for superscripts. Line printers reserve the top line of each page; daisy and page printers reserve the top quarter line.

Top of Form — The printer does not reprint the page if you press Top of Form while a printer deselects internally (e.g., out of ribbon, malfunctioning, encounters a stop code). This feature applies only when you deselect manually.

DAISY PRINTERS

The following conditions and restrictions apply to all daisy printers supported by the peripherals software.

Condition

Translation Table

Meaning

Unpredictable results may occur if you use the OIS-PTR20 character set number with other printers.

Procedure

Do not use the OIS-PTR20 character set with other printers.

The translation table for active daisy printer character sets appears in Appendix B.

Restrictions

Format Line Spacing — The printer emits page feeds in the following situation: two format lines are separated only by a note and a page character; the note has wider spacing than the page character; the first line of the page associated with the page character has a superscript in it; and the page prints without notes.

Illegal Width With a 15 Pitch Font — When printing with a 15 pitch font, an illegal width occurs at 198 characters instead of 197.

Page Breaks — The daisy printer ignores page breaks when the following conditions exist:

- Two format lines are separated by a note and a page character.

- The note has wider spacing than the page.

- The first line of the page, associated with the note, has a superscript in it.

- Without Notes is selected in the Print menu.

Ribbon Advance — Twin-head daisy printers do not advance the ribbon when printing one character per line per head.

Stop Codes — The printer deselects and lights the CHANGE DAISY indicator before printing a footer or the next column of a dual column print request if a daisy printer encounters a stop code.

WP and WP Plus — You cannot use a Prestige Elite Special or Orator print wheel under WP Plus, if you use it under WP. Daisy printers do not allow you to create these fonts. (Probe Number F010377)

DW/OS-20 DAISY PRINTER

The following conditions and restrictions apply to the DW/OS-20 Daisy Printer.

Condition

Change Paper Indicator

Meaning

The printer feeds an extra sheet of paper after each printed page if the document footer contains a return and you request that the document print in Draft mode. The printer stops printing after the first printed page that has a footer, deselects, and the Change Paper indicator lights up.

Procedure

Turn off the DW/OS-20 printer and then turn it on again. Take the RETURN out of the footer, or do not print in Draft mode.

Restriction

Dual Columns — The printer stops printing the first copy after page 3 if you request several copies of a document that has dual columns.

DW/OS-55 DAISY PRINTER

The following conditions and restrictions apply to the DW/OS-55 Daisy Printer.

Conditions

No Feeder

Meaning

The quality of the printout may be poor if there is no feeder and you print on the top or bottom three lines of a page.

Procedure

Use continuous paper, or do not print on the top or bottom three lines of a page.

Paper Jam With a Ziyad Sheet Feeder

Meaning

Cancelling during a paper jam does not cancel. The document sits in waiting and does not respond to reselect.

Procedure

Cancel out of waiting and restart process.

Secondary Character Set

Meaning

The DW/OS-55 uses the secondary character set when it begins the second printout if the last print request used the same character sets as the current print request.

Procedure

Do not change print wheels between print requests.

Restrictions

Centering Text — The DW/OS-55 centers text over approximately 1/2 space. (Probe Number F500033)

DP/WP Switching — The DW/OS-55 feeds an extra sheet of paper when you switch from DP to WP. (Probe Number F600250)

Dual-Sheet Feeder — The DW/OS-55 does not flag an illegal width until a 10-pitch line has 87 characters or a 15-pitch line has 199 characters if you are using a dual-sheet feeder. The printer should flag the lines at 86 and 198 characters, respectively.

Dual-Sheet Feeder — The DW/OS-55 accepts paper only from Bin 1 in the following situations:

- You have a dual-sheet feeder and select Form 2.

- The printout is completed and both bins are empty.

- You submit the next job and select Continuous Forms.

File Transfer — The left margin moves to the right and an "Illegal Width" message appears when you transfer files from a VS system to an OIS and print from a Landscape tray on a dual-sheet feeder.

Left Margin— The left margin prints at position 23 if you print a document at 66 lines per page with a left margin at 20 and change the line count to 60. This condition occurs when a feeder is attached to the DW/OS-55. (Probe Number F600026)

Printing a Document With No Page Breaks — The printer does not print and the "Change Paper" message appears continuously, even after you press SELECT, if a Ziyad sheet feeder is attached to the DW/OS-55 and you print a document with no page breaks and a page length of 29. (Probe Number F400686)

Printer Output — The DW/OS-55 printer is not a direct replacement for the 6581W or the 5577 printer. Print results may vary slightly.

Secondary Character Set — The DW/OS-55 printer may print a line of text starting at the right margin if you are using a secondary character set, and the previous line ends with a return and uses both character sets.

Stop Codes — The DW/OS-55 stops at the end of a line of stop codes. It does not stop at each stop code. (Probe Number F300231)

Stop Codes — The DW/OS-55 printer makes two passes across a line, regardless of the number of stop codes. If a stop code is at the end of a line, the line does not stop because there is not an actual font change within that line. (Probe Number F011324)

Stop Codes — If a page contains multiple underscored stop codes and you cancel the print request while the printer is deselected, you must then power the printer off and on again to continue.

Twin-Sheet Feeder — Select Standard and start with a page other than the first page when you send a document to print. All the document's pages print from bin 2. (Probe Number F300464)

Underlined Stop Codes — An underlined stop code causes the DW/OS-55 to stop on the line before the stop code. (Probe Number F009408)

Using the TITLE Print Wheel — Some of the letters may crowd against other letters when you are printing with the TITLE proportional space print wheel.

DW/OS-60 DAISY PRINTER

The following restrictions apply to the DW/OS-60 Daisy Printer.

Restrictions

Overflow — When printing at 8 lines per inch, if any overflow text occurs, it prints at 6 lines per inch.

Twin Sheet Feeder — A blank sheet of paper is ejected between print jobs when you print a DP Wang OFFICE memo followed by a WP document.

PM015 DAISY PRINTER

The following restrictions apply to the PMO15 Daisy Printer.

Restrictions

Attributes — The underscore, double underscore, and strike thru attributes are dropped from spaces in a line that immediately follows a stop code and a new format line. If a font change is also indicated within that line, attributes and text will misalign.

Bidirectional Printing — The PM015 does not print bidirectionally when you select PS pitch in the Print menu. Hesitation occurs at the end of the line. (Probe Number F600138)

Legal Paper Tray — The page length entry on the menu must be 51 to indicate landscape orientation if you are using the legal paper tray and you want lines with 158 characters (on 8.5- x 14-inch [216- x 356-millimeter] paper). (Probe Number F600516)

Stop Codes — The printer does not restart a page when you use stop codes, deselect the printer, press the Top of Form button, and reselect the printer. The printer continues printing from where it left off rather than performing a page restart. (Probe Number F012883)

The PM015 printer may begin at the next page rather than at the page where printing stopped when you request that printing be resumed (by pressing SELECT, TOP OF FORM, and SELECT).

6581W AND 6581W-1 DAISY PRINTER

The following conditions apply to the 6581W and the 6581W-1 Daisy Printers.

Conditions

Changing the Daisy Wheel

Meaning

The paper jams on a twin-sheet feeder (stopped for changing the daisy wheel) if you have done the following: moved the carriage, closed the cover, and pressed the Top of Forms button.

Procedure

Do not press the Top of Forms button after changing the daisy, and try to avoid moving the carriage.

Two Character Sets

Meaning

The CHANGE DAISY indicator lights up after the first document prints and before the next document prints when you are using two character sets.

Procedure

Press SELECT twice.

Restrictions

The following restrictions affect the printing of the 6581W printer.

Dual Columns — The line spacing is incorrect if you specify zero in the format line to create overstrikes.

Printing a WP and WP Plus Document With PS Bold — Printing a document with PS Bold in WP and WP Plus results in different printed formats. Document line endings differ. (Probe Number F300241)

Scripts — The 6581W daisy printer does not print a solid line of proportionally spaced characters that contain subscripts and/or superscripts (i.e., there must be spaces between the characters).

Stop Code — The 6581W printer (with a twin-sheet feeder attached) stops because of a Stop Code. When you change the print wheel, you move the carriage to the right. If you do not move the carriage back, close the cover, and press the Top of Forms button, the printer ejects the paper and causes a paper jam. (Probe Number F006430)

Unjustified Scripted Characters — Unjustified scripted characters do not print correctly if you use more than one line of continuous text with no spaces when you are printing with a PS wheel. (Probe Number F007917)

Zero Format Line and Overstrike — Using a zero format line to create overstrikes on the 6581-W and the 5577 prints correctly from the Print Document menu; however, if the document has Dual Columns, the zero format line text is superscripted instead of being on the same baseline.

The document prints correctly using the Dual Column or regular printing style if you follow these simple steps:

1. Enter regular text single spaced.

2. Enter a zero format line.

3. Enter the two lines of text that you want to overstrike.

4. Enter another single-spaced format line.

5. Make the first character a RETURN character.

6. Enter more regular text.

(Probe Number F009125)

5581WD DAISY PRINTER

The following restriction applies to the 5581WD Daisy Printer.

Restriction

Twin-Head Daisy — Twin-head daisy printers do not advance the ribbon when printing one character per line per head. These printers do not support eight lines per inch printing.

ALL MATRIX PRINTERS

The following conditions and restrictions apply to all matrix printers supported by the peripherals software.

Conditions

Exceeding 132 Characters

Meaning

A line exceeding 132 characters does not cause the print job to terminate with an "Illegal Width" message on Models 5521, 5531-1, 5531-2, and 5535 if you select other than 10-pitch from the WP Print menu.

Procedure

Always select 10-pitch from the WP Print menu to ensure that a job terminates with an "Illegal Width" message if a line exceeds 132 characters.

No Feeder

Meaning

The quality of the printout may be poor if there is no feeder and you print on the top or bottom three lines of a page.

Procedure

Use continuous paper, or do not print on the top or bottom three lines of a page.

Paper Jams

Meaning

Matrix printers may lock or print improperly if there is a severe paper jam.

Procedure

Turn the matrix printer off and then turn it on again.

Restriction

Text File Printing — Text file printing defaults to character set 1.

5521W MATRIX PRINTER

The following conditions apply to the 5521W Matrix Printer.

Condition

Printout Completion

Meaning

The 5521W deselects after completing a print request.

Procedure

Manually reselect the 5521W matrix printer so it can print the next request.

5577 MATRIX PRINTER

The following conditions and restrictions apply to the 5577 Matrix Printer.

Conditions

Dual Columns

Meaning

Press RETURN at the end of the header in a dual column document. If the header format line is too wide, the document does not print correctly and the 5577 stops functioning.

Procedure

Add a RETURN to the header. If this does not solve the problem, turn the printer off and then on again.

Switching Draft and High Density Fonts

Meaning

Adverse results may occur if you switch between Draft and High Density fonts within a document.

Procedure

Do not attempt to switch between these fonts within a document.

Restrictions

Different Paper Sizes — The 5577 printer does not deselect and does not light the CHANGE PAPER indicator if the print job uses different sizes of paper and the twin-sheet feeder is attached.

Dual Columns — The line spacing is incorrect if you are printing dual columns and you specify zero in the format line to create overstrikes.

VS/IIS AND OIS WP

Dual-Sheet Feeder — The following restrictions apply to the DSF-77:

- Do not print return addresses on envelopes when you use the envelope attachment on the 5577 with a dual-sheet feeder.

- The DSF-77 feeds paper from the bottom tray when you are printing in continuous mode. The user manual states that is should feed from the upper tray.

- Cancelling with the cover open or while the printer is deselected does not print a cancellation message.

Page Length — The 5577 does not deselect if a twin-sheet feeder is attached and the page length of a current print job is not the same as the length of the previous job. (Probe Number F007314)

Strike Thru — When printing strike thru on text that is centered and printed with a proportional space font, the attribute prints beyond the text.

Superscript/Subscript — A line that ends with a superscript causes the following line to print incorrectly above the base character. If a line ends with a subscript, all the subscripts on the following line print incorrectly below the base. (Probe Number F007846)

Text Without Spaces — Some of the text on the line may be lost if you are printing a long line of text without spaces and using a 15-pitch or PS font.

Underlined Stop Codes — Underlined stop codes are not recognized in the middle of a sentence; the entire sentence prints before the printer stops for a printer adjustment.

Zero Format Line and Overstrike — A zero format line, used to create overstrikes on the 6581W and the 5577, prints correctly from the Print Document menu; however, if the document has Dual Column printing style, the zero format line text is superscripted. It does not print on the baseline.

The document prints correctly when you use the Dual Column or regular printing style if you follow these simple steps:

1. Enter regular text single spaced.

2. Enter a zero format line.

3. Enter the two lines of text that you want to overstrike.

4. Enter another single-spaced format line.

5. Make the first character a RETURN character.

6. Enter more regular text.

(Probe Number F009125)

5578 COLOR MATRIX PRINTER

The following restrictions apply to the 5578 Color Matrix Printer.

Restrictions

Line Clipping — When using the Sheet Feeder, a Paper length of 84 (at 8 lines per inch) prints 111 lines; the last line is clipped.

Sensing Errors — The printer cannot sense the Paper Out or Paper Jam while performing a Deselect/TOF.

5535 MATRIX PRINTER

The following restrictions apply to the 5535 Matrix Printer.

Restrictions

Bold Text — The 5535 matrix printer intermittently overbolds bold text in dual column.

Colon Character — Only the upper part of a colon prints when the bold, underscore, or strike thru attribute is applied.

Continuous Forms — Sending Continuous Forms documents to the 5535 printer causes the printer to deselect after returning from PRTTSK. The "Change Paper" light comes on. (Probe Number F400084)

Font Changes — If two character sets are specified at print time, the printer will not change fonts.

Superscripts — When printing superscripts in double or triple line spacing, too much space appears between lines.

Two-Line Footers in Draft Mode — The second line of a two-line footer prints on the top of the next page when printing in draft mode.

LM400/700/900 MATRIX PRINTERS

The following restrictions apply to the LM400/700/900 Matrix printers.

Restrictions

Cancel a Print Job — When you cancel a print job, these printers may be slow to respond or may even complete the print job before the request can be processed.

Font Changes Within the Same Line — These printers cannot support different fonts within the same line.

Fractional Line Spacing — Fractional line spacing at 8 lines per inch is not supported. It is supported at 6 lines per inch.

Illegal width — Printing with continuous paper in a 15 pitch font, the printer prints only 196 characters and flags an illegal width at 197 characters instead of printing 198 characters.

Out of Paper Error Condition — When an out of paper error condition exists, the "Deselect" status will appear when the printer queue is displayed.

Page Restart — These printers do not perform a page restart when Deselect/Top of Form is pressed.

Printer Failure — When printer failure occurs and the job is cancelled, the printer remains in the WP mode. To idle the printer, use WPCONTROL or IPL the printer.

Sign Logo National Subset — Sign Logo font appears as 10 Pitch Draft in the National Subset.

Special Characters — Special characters do not print in Draft 10 and 12 Light fonts. The cent sign (¢) does not print in Gothic 15 Regular font.

Upper Case Fonts — In upper case fonts, underscore and double underscore significantly strike through the lower portion of text.

ALL BAND PRINTERS

The following restriction applies to all band printers supported by the peripheral software.

Restriction

Fractional Line Spacing — Band printers cannot do a fractional line space. If you specify fractional spacing, the printer uses the next full line.

5574 AND 5574-1 BAND PRINTERS

The following restrictions apply only to the 5574 and 5574-1 Band Printers.

Restrictions

Alarm Button — As much as a line and a half of text may not print on the 5574 and 5574-1 line printers if you press the Alarm button.

Lines per Inch — The 5574 prints six lines per inch only.

Superscripts — When printing superscripts in double or triple line spacing, too much space appears between lines.

Tabbed Columns — Tabbed columns become misaligned when special characters are missing.

Top of Form — The following restrictions apply to Top of Form:

- The line printer restarts the page but does not advance to the top of the form if you press the Online and Top of Form buttons simultaneously while a 5574 or 5574-1 prints. As a result, you must reprint the whole job.

- The paper advances an extra 2 to 3 lines if you press Top of Form before a WP job begins printing.

ALL LASER PRINTERS

The following restriction applies to all laser printers supported by the peripherals software.

Restriction

Text Files — The default font is character set 1 when you print a Text file.

LPS8 LASER PRINTER

The following conditions and restrictions apply to the LPS8 Laser Printer.

Conditions

Overflow

Meaning

Spacing between the first and second lines of text on the overflow page may be compressed or expanded.

Procedure

Reformat your document.

Overflow

Meaning

Subscripted text on line 64 of an 11-inch (279-millimeter) page causes an overflow.

Procedure

Reformat your document as needed to avoid subscripted text on line 64.

Restrictions

Canceling a Print Request — It may take three to four minutes to cancel a print request. As many as nine pages of a document could print from the time you initiate the Cancel Print request to the time the printout cancels. (Probe Number F300294)

Canceling a Print Request at a Stop Code — The printer ejects the page and prints the cancellation message three-quarters of a page down on the next page if you cancel a print request while a printer is stopped because of a stop code.

Canceling a Print Request When Paper Out — When you cancel with the paper out, no message appears after the paper is loaded.

Landscape and Portrait on Same Page — Mixing Landscape and Portrait fonts on the same page is not supported on the LPS8 printer. (Probe Number F400944)

Longer Documents — Special Print Functions and Queue Control cannot be used to cancel print jobs when you are printing a document five or more pages in length. Using Special Print Functions to cancel the job causes the workstation to display "Waiting" until the job is completed. (Probe Number F500135)

Multipage Documents — The LPS8 releases a blank sheet and does not issue a cancellation message if you cancel a job because the printer is out of paper and then reload the printer with paper.

Multiple Stop Codes — Use a format line of 65 characters and a left margin of 10. If a word at the left margin contains two or more stop codes, the current line overprints the line above and an "Illegal Width" message appears. (Probe Number F301039)

Printing Page Two From Standard — The first page of copy one prints from bin 1 and the second page from bin 2 if you select standard, request two copies, and print pages 2 and 3. All pages of copy 2 come from bin 2. (Probe Number F012814)

Printing Profile of Document Index — The tops of both uppercase and lowercase letters are lined up only on the first line of the index when you are printing a user profile or document index and using a 15-pitch Letter Gothic font or a 10-pitch Courier font. (Probe Number F501487)

Printing Special Characters — The special characters do not print if you are printing a document and using two fonts and the second font has special characters substituted in the translation table. (Probe Number F301910)

Right Justification with Alternating Fonts — Documents that have right justification and alternate between 10- and 12-pitch fonts have an uneven right margin when printed. (Probe Number F012667)

Stop Codes — The 12-pitch page brings text up from the next line on the printout when using stop codes to change from 10-pitch to 12-pitch on separate pages. (Probe Number F300443)

Underscore and Bold Attributes — The bold appears in the characters only and not on the underscore when printed if text is assigned both the underscore and bold attributes.

LPS-12 LASER PRINTER

The following conditions and restrictions apply to the LPS-12 Laser Printer.

Conditions

Expanded (Bold) Printing

Meaning

Characters assigned the bold attribute are printed in twice their normal height. Text may overflow to the next page.

Procedure

Remember that bold text requires two lines when you determine your page layout.

Expanded (Bold) Printing

Meaning

Expanded (Bold) printing is line-oriented. A line cannot print in bold unless the first character on that line is assigned the bold attribute.

Procedure

Assign the bold attribute to the first character on the line.

Overflow

Meaning

Text overflows to the next page if you print a page that contains more than 64 lines of text. The LPS-12 may print a blank page or a page that contains a minimal amount of text.

Procedure

Reformat the page to contain 64 or fewer lines.

Page Width

Meaning

The text wraps around to the next line, and one character does not print if a document page is wider than the printer paper.

Procedure

Reformat the document or change the Left Margin field in the Print menu to a smaller value.

Paper Supply

Meaning

The status code CL (clear) appears after status code C4 (check paper cassettes) appears and you add paper.

Procedure

Press the C (CLEAR) button to resume printing.

Terminating Printout

Meaning

You cannot cancel a print job while the LPS-12 is deselected.

Procedure

Make sure that the LPS-12 printer is selected.

Restrictions

Canceling — You cannot cancel a print job on the LPS-12 while the printer is deselected.

Catalog/Display List — Header information does not align properly over the correct column if you select Details or Summary when you are printing the Catalog/Display List in OIS. This Catalog/Display List condition occurs if you use 10-, 12-, or 15-pitch fonts on the LPS-12. If you select Complete File Names, the headings align properly. (Probe Number F500386)

Device Control — A malfunction activity code displays "Device Control" until a job queues and prints if you turn the bin lever to add paper.

Illegal Width — The line wraps around to the next line and one character is lost when an Illegal Width condition occurs on the LPS-12.

Overflow — The LPS-12 may print blank pages or pages that contain minimal amounts of text when you are printing full pages of text (64 lines or greater cause overflow conditions).

Paper Cassette Handle — The paper may jam or you may lose data if you move the paper cassette handle while the LPS-12 is printing.

Portrait and Landscape Fonts — A document cannot have both Portrait and Landscape fonts on the same page.

Printing with 13-inch Paper — Specify a page length of 76 rather than 78 to ensure correct placement of text on a page when you are printing on the LPS-12 with 13-inch (330-millimeter) paper.

Superscript and Subscript Characters — Superscript and subscript characters are printed one-half the size of normal printed characters. (Probe Number F301349)

Underscored Stop Code — The LPS-12 fails to display a C4 status code when it encounters an underscored stop code.

LIS-12/24 LASER PRINTERS

The following conditions and restrictions apply to the LIS-12/24 Laser Printers.

Conditions

Error Recovery Process

Meaning

You may create new recovery conditions if you operate the printer controls (the top panel controls or the paper cassette latch) immediately after the printing engine halts.

Procedure

Wait approximately 10 seconds before continuing after the engine halts.

Paper Changing

Meaning

The printer controller cannot receive status information about the tray latch and a C3 message code appears if you open the front cover unnecessarily before changing the paper.

Procedure

Toggle the paper tray latch after you close the front cover.

Restrictions

Cancel During a Paper Out Condition — Toggling the paper tray handle and canceling a print job causes the printer to eject a blank piece of paper before printing the cancellation message after paper is reloaded.

Canceling During a Font Change — The printer does not cancel a print job of only a few pages during font changes.

Expanded Bold and Superscript — When using Expanded Bold on the LIS-12/24, text within the same line of a document causes the Superscript text to be raised one line above its correct position.

Expanded Underscore Text — The underscore touches the top of the following line of text if the underscored text is expanded.

Footers — Footers do not automatically line up when expanded print is used.

Forms — The C4 Error light appears if you send two documents to print and you select FORM 1 for the first document and FORM 2 for the second document. (Probe Number F300695)

Full Page Overflow — Full page overflow produces a large amount of blank space between text at the top and bottom of the page.

Hyphenation — Laser printers do not justify documents properly. Text does not appear on your PS workstation as it does on the printed document. The document hard copy shows the hyphen that is used for justification, and spaces show after the hyphen.

Landscape Document With PS Bold — Columns in documents containing dec tabs and numerical columns do not align properly if you print the document in Landscape PS Bold. The document prints correctly in Portrait and other Landscape fonts. (Probe Number F400524)

Line Wrapping — Changing between 12-pitch portrait and a user-modified font with stop codes causes lines to wrap around and print in the wrong font.

Mixing Fonts With Justification — Text does not properly justify when printed if a document has a proportionally spaced font and portions of text are assigned pitch-size fonts.

Narrator 10 and Double Underscore — The double underscore touches the bottom baseline of characters when you use the Narrator 10 (Portrait and Landscape) font and Double Underscore. (Probe Number F010556)

Out of Toner Condition — The printer does not print a cancellation message after the toner is reloaded if you canceled the print job.

Overflow Text With Justification — Overflow text that is assigned a secondary font does not justify properly.

Paper Cassette Handle — The paper may jam or you may lose data if you move the paper cassette handle while the printer is in operation.

Paper Size — If you have a different size paper in the upper and lower paper trays, you can select the page length you want in the Print menu without causing the C4 status code to display by selecting the Unit Standards option from the main Peripheral Utilities menu and then selecting Manual Paper Change instead of Automatic Paper Change.

You can use Form 1 for 11-inch (279-millimeter) paper and Form 2 for 14-inch (356-millimeter) paper. The default paper length is 11 inches for both trays.

Printing a Document With No Page Breaks — The printed output includes blank pages and/or incomplete pages if the document has no page breaks and you select a 15-pitch Landscape font with 51 lines per page. (Probe Number F300541)

Printing an Empty Document — A blank page prints if you send an empty document to print or indicate a page length of zero. (Probe Number F300270)

Printing Selected Pages From a Document — The error message "Access conflict in file MAILBOXUxx" appears if you issue a print request for another page in the same document before the first page is printed. (Probe Number F300032)

Scripted Text With Justification — Scripted text begins printing one space beyond the left margin when a sentence terminator is followed by two spaces, superscripted or subscripted text wraps around to the next line, and when justification is selected.

Strike Thru — The strike thru mark does not always strike through the center of a character when the text is justified.

Toner Out — If you cancel when the toner is out and the J1 signal is displayed, no message will be printed.

12-Pitch and Hyphenation — Printing a document in 12-pitch causes text from the next line to wrap to the end of the previous line. Use the hyphenation feature (COMMAND + Hyphen) to adjust the right margin and a line ending with a hyphenated word. The hyphen is not dropped. (Probe Number F500469)

12-Pitch Landscape Font — The LIS-12 generates an Illegal Width on the 117th character when you select a 12-pitch Landscape font and 8 1/2 - x 11-inch (216 - x 279 - mm) paper. (Probe Number F401271)

15-Pitch Landscape Font — When you print in a 15-pitch Landscape font, horizontal spacing across a line printed on the LIS-12 is compressed as compared to the same line printed on the LPS-12. (Probe Number F401270)

15-Pitch Letter Gothic Font — The upper line of a double underscore prints through the characters rather than underneath the characters. (Probe Number F500178)

LCS15 LASER PRINTER

The following restrictions apply to the LCS15 Laser Printer.

Restrictions

Adding Paper to the Lower Tray — Remove the tray before adding the paper when the LCS15 prompts you to add paper to the lower tray. When you reinsert the lower tray, the printer detects that you added paper.

"Breaking" Paper — Before you add paper to a paper tray, make sure that you "break" or fan the stack of paper. After you break the paper, realign the stack so that it is square.

Canceling a Document To Be Deleted — Documents that are to be deleted after printing are not deleted, and no cancellation message is printed if you cancel the print job.

Double Underscore — Double underscore prints as a single line that is thicker than the single underscore.

Font Display — All fonts supported by the LCS15 are displayed in the WP Font Index. Only the fonts assigned a character set number can be accessed in standard WP printing.

Landscape Text — The LCS15 prints 63 lines on the page (not 64) when you select Landscape and eight lines per inch.

Lines Per Page — When using a 10-pitch portrait font at 6 lines per inch, the maximum number of lines per page is 63.

Paper Jams — Resubmit the print request to the printer after correcting the paper jam if the LCS15 jams one or more pages while printing a document or a file. The LCS15 does not automatically reprint pages that were jammed.

Page Length — The following page length restrictions exist:

- When using A4 paper and a 10 point Landscape font, 62 lines print on the LCS15 instead of the specified 61 lines.

- When using Letter paper and a 6 point Landscape font, 94 lines print on the LCS15 instead of the specified 93 lines.

- When using Letter paper and an 8 point Landscape font, 71 lines print on the LCS15 instead of the specified 70 lines.

Removing Paper from the Lower Tray — Remove the tray from the printer if you must remove paper from the lower tray. If you remove paper from the lower tray while it is still in the printer, a paper-feed jam occurs the next time the LCS15 tries to feed paper from the lower tray.

Right Justification With Point Size Fonts — Right justification with point size fonts is slightly irregular.

LDP8 LASER PRINTER

The following conditions and restrictions apply to the LDP8 Laser Printer.

Condition

Stop Reference Support

Meaning

You cannot automatically deselect the printer because the stop reference is not supported.

Procedure

Queue documents to use Form 1 to place the printer into manual feed.

Restrictions

Best Match Fonts — A best match of the font will be made if documents have fonts assigned that are not loaded on the LDP8. Because it is not possible to predict which font will be selected as a best match, printed results may vary from the original. The only way to guarantee consistent output is to ensure that the fonts assigned to a document are available on the printer.

Bold — The last character on a line cannot be made bold if a line of text occupies the entire printable width of a page. Applying bold exceeds the printable width of the page.

Cartridges Supported — The LDP8 supports only cartridges sold through WangDirect at 1-800-225-0234.

Courier 10 pitch Internal Fonts — With Courier 10 pitch internal fonts, subscripts may be dropped from the last line of text on a page and overflow to the top on the next page.

Font Cartridges — The Peripheral Utilities Font Index screen lists the cartridge fonts that are available for the printer. However, selecting a font from the font index does not guarantee that the font will be used. You must ensure that the correct cartridge containing the desired font is inserted into the printer. If the cartridge is not the one assumed to be in the system, the printer attempts to use a font that is a best match, but incorrect text formatting may result.

Helvetica 14 Point Bold Font — With Helvetica 14 point bold font, subscripts are separated from the baseline text and print on the next line in overflow text.

Identical Fonts — Peripheral software allows identical fonts to be installed on the printer. The last font loaded is selected if identical fonts are loaded on the system.

Mixing Cartridges — Unpredictable results occur if F and Z cartridges are inserted into the LDP8 at the same time.

Number of Fonts — The number of fonts that can be used on a page is limited to the number of fonts that can be loaded in the printer memory. When the memory is full, the system attempts to make a best match for the remaining fonts assigned to a page.

Paper Jams — Paper jams cause the loss of the page in process because there is no specific paper jam information from the LDP8. You must resubmit the page after a paper jam.

Paper Selections — Manual and automatic paper selection cannot be implemented in Peripheral Utilities. The LDP8 stops and requests a paper change if the paper size and lines per page command do not coincide.

Paper Size — The 13-inch (330-millimeter) paper sizes such as, 8 x 13 (203 x 330), 8.27 x 13 (210 x 330), and 8.5 x 13 (216 x 330) are not supported.

Pitch Font — The 16.67-pitch font is treated as a 15-pitch font. The 15-pitch font is handled by using the Extended Character Range (ECR) fonts.

Portrait and Landscape — You cannot combine portrait and landscape printing on a page.

Printable Area — The printable area has a 1/6-inch left margin and a 1/3-inch right margin.

RAM — The amount of Random Access Memory (RAM) in the printer has a direct impact on performance and functionality. More RAM means more fonts can be used on a page, and the printing of a page with multiple fonts is faster. Set the switches on the siblink board to indicate the amount of RAM. Refer to the installation instructions that accompany the LDP8 printer for information to set the switches.

Times Roman 10 Point Regular Font — Times Roman 10 point regular font word wraps text differently from other Times Roman fonts with different density and slants, such as bold and italic.

Zero Line Spacing — Large bold point fonts with strike thru and zero line spacing cause the printer to select and display the 21 Error message. When you reselect, the remainder of the text is dropped from the page currently being fed and printing continues normally on the next page.

5548Z TYPESETTER

The following restrictions apply to the 5548Z Typesetter.

Restrictions

Canceling a Print Request — You cannot cancel a print request sent to a typesetter. If you try to cancel a print request from the workstation, the workstation remains in a wait state; the request is not canceled. (Probe Number F002597)

Date Last Printed — The date last printed in the Document Summary is updated with invalid data. (Probe Number F002225)

Deleting Fonts — A fatal error appears on the H&J screen and on the on-line typesetter if you delete any of the first four fonts from the catalog.

Tab Text — The Tab Text command (TT) does not operate across multiple tab columns or on both halves of a Quad from the middle line.

Test Hyphenation — Phrases with embedded spaces give incorrect hyphenation when you use the test hyphenation command (TH).

VS/IIS PERIPHERAL UTILITIES

The following restrictions apply to the VS/IIS Peripheral utilities.

Restrictions

Default Files — All changes made to a specific printer's unit default file are saved indefinitely when this version of Peripheral Utilities is invoked for that specific printer. Changes to the printer default file are no longer accessible to that unit.

Default Files — The system default file is also modified for Return Mailbox and Date Format when a printer's unit default file is altered.

Deleting PostScript Fonts — You cannot delete 12-point PostScript fonts. These 12-point fonts are the master fonts used to create other LCS15 sizable fonts. The fonts do not appear in the Delete a Font index.

Entering Return Mailbox and Unit Number Fields — The value entered in the field must be a valid unit number (1-255 for Return Mailbox and Unit Standards). The value must be left-justified in the Fill-In field.

Font Index — You can display the font index as viewed in past releases of Peripheral Utilities for printers released prior to the LCS15. The alternate display shows the former font index format with the user-defined font names.

To access the Font Index menu, select the GO TO key from the new font index. Use the former font index to display the font index for daisy and line printers and other printers, such as LIS-12/24, 5577, LPS8, and VS-PM019.

Font Index Display — The implementation of a new font index display resulted in modifications to the Create New Table utility for the LCS15 and future printers. A menu listing available national subset names replaces the Enter New Character Set Name fill-in field. Choose the appropriate entry from the list of national subsets and press EXECUTE.

Font Limitations — The WP environment supports a maximum of 128 available fonts per printer, nine of which can be active at any one time. Exceeding the 128 font limit produces undesirable and unpredictable results. Do not choose a total combination of LCS15 fonts and sizes exceeding 128 index entries or install more than 128 fonts for any printer.

Modifying Default Files — The printer must be idle (not handling a print request) when you are modifying that unit's default file.

Other Printers — Printers released prior to the LCS15 continue to function as in past releases of Peripheral Utilities. The Enter New Character Set Name field still appears.

Printer Status While Using Peripheral Utilities — All printers must be idle when you are using the LIS-12/24 Font Auto-Creation, WP Font Regeneration, and PostScript Font Sizing utilities.

Special Fonts — Signature/Logo and other special fonts are not correctly created for the LIS-12/24 by the LIS-12/24 Font Auto-Creation utility. Order these fonts from WangDirect at 1-800-225-0234.

System Defaults — Turn off all printers when you are modifying the system defaults.

Translation Tables — Turn off all printers when you are working on translation tables.

Updating a System and Invoking Character Set Utilities — A mandatory version update program is provided with Peripheral Utilities to upgrade a system for the new WP font indexing scheme and to support the LCS15. Run the update program before invoking Character Set Utilities after you install the update software on the VS.

If you do not first run the update program, a prompt appears informing you to run the update when you attempt to invoke Character Set Utilities. The utility may require significant process time.

Workstation Requirements — Peripheral Utilities must be installed and operated from a Z-80 workstation with 64 kilobytes (KB) of memory.

WP Font Regeneration — Run the WP Font Regeneration utility after you install Peripherals. Check and reassign character set numbers on the LCS15 and future printers after running the WP Font Regeneration utility.

Zero as Sentence Terminator or Decimal Alignment — Do not enter a zero (0) as a Sentence Terminator or Decimal Alignment character under Word Processing Print Parameter Alteration.

DUAL-SHEET FEEDERS

The following conditions and restrictions apply to the dual-sheet feeders supported by the peripherals software.

Conditions

Paper Size Specifications

Meaning

An incorrect left margin or an "Illegal Width" message may result if you specify a non-standard paper size in the Paper Length field of the Word Processing Print menu. The printer interprets a nonstandard paper size as the next higher standard size.

All printers, with the exception of the LIS-24 and DW/OS-55, default to a paper size of 84 if you specify a size larger than 84 (the maximum length). The LIS-24 defaults to 97 if you specify a size larger than 84. The LIS-24 uses the large paper bin, even if you select Form 1, Form 2, or Standard.

Procedure

Specify the paper lengths that are listed in Appendix C. Note that the feeder supports only one paper size per print request.

Print Menu

Meaning

The DW/OS-55 printer takes paper from the lower tray first if you specify Continuous in the Forms field of the Print menu. Printer documentation states that the upper tray is first.

Procedure

None.

Restrictions

Paper and Tray Size — Select the page length from the WP print menu when you are using the Dual Sheet Feeder or Triple Sheet Feeder. The sheet feeder supports only one size/orientation per print request.

Paper Lengths — Paper lengths selected from the print menu that are not standard sizes are interpreted as the next higher standard size. The paper length defaults to 84 when the paper size is greater than 84.

PCWP/IWP PRINTING

The following restrictions apply to PC Word Processing (PCWP)/Integrated Word Processing (IWP) printing.

Restrictions

Memory Requirements — PCWP/IWP printing requires a printer with at least 64 KB of memory.

Printing Files — The file or object must be on a mounted disk on the host VS system to print a PCWP or IWP file (as well as any externally referenced object) on the VS. You must first attach to the system. Refer to the *Wang Professional Computer Series Integrated Word Processing Reference Guide* for information on attaching to a VS and creating or copying the file or object on a mounted disk.

Queuing — You must queue a document, graphics file, or a PIC™ image to print on a VS. Refer to the *Wang Professional Computer Series Indexer User's Guide* and the *Wang Professional Computer Series PIC™ File Server User's Guide.*

Queuing an Image or Graph as a Separate Entity — The image or graph can reside on the Winchester disk if you are queuing an image or graph as a separate entity. The document, images, or graphs must be on a mounted disk on the host VS if you are queuing an IWP document that contains references to images or graphs.

Using a LIS-12/24 Printer — You must use an LIS-12/24 printer if you are printing an image or a graphics (VDM) file as a separate entity. If you use a printer other than the LIS-12/24 to print an IWP document that contains images, the document prints with blank areas where the images should be.

VS/IIS PRINTING

The following restriction applies to VS/IIS printing.

Restriction

MAILBOX Library — Files are placed in a library called MAILBOX on the system disk during the printing of WP documents. User programs should not access this library for any reason. The library MAILBOX should have a protection class of blank. Note that the library MAILBOX is also used by other applications such as WP Plus and VS Alliance.

Chapter 4
WP PERIPHERAL UTILITIES

OVERVIEW

This chapter provides you with the instructions necessary to run the following WP Peripheral utilities:

Character Set Utilities — This section explains how to assign and view character set numbers, how to delete a character set from a specific printer on your system, and how to modify the printer translation tables.

Changing Printer Parameters — This section explains the methods you can use to change the parameters for printers connected to your system.

LIS-12/24 Font Auto Creation Utility — This section explains how to use the LIS-12/24 Font Auto Creation utility.

WP Font Regeneration Utility — This section explains how to use the WP Font Regeneration utility.

PostScript Font Sizing Utility — This section explains how to run the PostScript Font Sizing utility, how to specify new font sizes in Portrait/Landscape orientations, and how to process the new PostScript font sizes.

Single Font Diskette Update — This section explains how to run the Single Font Diskette Update used for OIS systems only.

ACCESSING PERIPHERAL UTILITIES

The following sections show you how to perform the steps to access Peripheral utilities for OIS and VS systems.

OIS Systems

You can access Peripheral utilities on OIS systems by selecting Peripheral Utilities from the OIS main menu. The WP Standards menu appears as shown in Figure 4-1. The Peripheral Utilities option is added to the main menu when you install the Peripheral utility software.

VS Systems

You can access Peripheral utilities on VS systems using the following procedure.

Procedure

1. Select Utilities from the WP main menu and press the EXECUTE key. The Utilities menu appears.

2. Select RUN Program or Procedure and press the EXECUTE key. The RUN Program or Procedure screen appears.

3. Enter START for the program and PUTIL for the library and press the EXECUTE key. The WP Standards menu appears as shown in Figure 4-1.

```
     Integrated Information System Peripheral Utilities — Rel xx.xx.xx


     Press EXECUTE to Select Indicated Choice




     ■ System Device Standards
     _ Unit Standards

                                              Date Format Option


     Return Mailbox No. 000                   ■ mm/dd/yy
                                              _ dd/mm/yy
```

Figure 4-1. WP Standards Screen

CHARACTER SET UTILITIES

The Character Set utility enables you to perform a variety of procedures that affect the character sets. A character set refers to all the characters in a particular font; the terms, character set and font, are essentially interchangeable. After you have loaded the fonts onto your system, you must then assign a character set number to the font. It is through the character set number that you assign a font to a printer.

Note: Some character set numbers are assigned by the system (defaults) during peripheral software installation. This assignment process occurs even if the system does not use a particular type of printer. You are limited to the use of 128 character sets, nine of which can be active at any one time, for a specific printer type.

You can perform the following procedures through the Character Set Utilities:

- Assigning and Viewing Character Set Numbers
- Deleting a Character Set
- Modifying Printer Translation Tables

Assigning and Viewing Character Set Numbers

Perform the following steps to assign or view character set numbers associated with a particular printer on your system.

Note: Be sure no documents are printing or are queued to print as you perform these steps.

Procedure

1. With the WP Standards menu displayed on the screen, position the acceptance block next to the System Device Standards option, and press the EXECUTE key. The Printer Standards menu appears as shown in Figure 4-2.

```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
Printer Standards


Press EXECUTE to Select Indicated Choice




        ■ Character Set Utilities
        _ Printer Parameter Alterations
        _ LIS-12/24 Font Auto-Creation Utility
        _ PostScript Font Sizing Utility
        _ WP Font Regeneration Utility
      · _ Single Font Diskette Update (appears on OIS peripherals only)
```
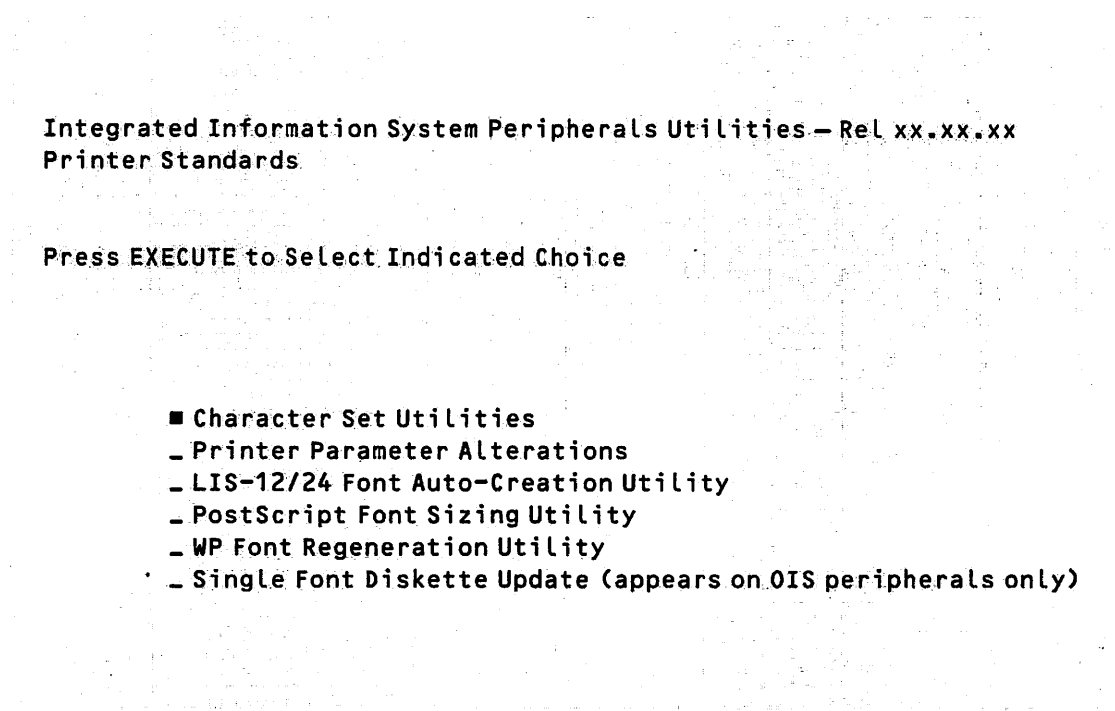
Figure 4-2. Printer Standards Menu

2. On the Printer Standards menu, position the acceptance block next to the Character Set Utilities option, and press the EXECUTE key. The Printer Character Set Utilities menu appears.

3. Position the acceptance block next to the Display/Selection option and press the RETURN key. Then use the space bar to select the type of printer to which the character set is to be assigned. Press the EXECUTE key. The system temporarily displays the message "Reading Disk" and the Font Index screen appears as shown in Figure 4-3. The current character sets and the numbers assigned to them are displayed on the screen.

Note: You can display an alternate font index (as viewed in past releases of Peripheral utilities containing user-defined font names) by pressing the Go To key. The alternate font index format appears for the following printers only: daisy and line printers, and the LPS-12, LIS-12/24, 5577, LPS8, and VS-PMO19 printers.

```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
Font Index — Display/Selection
LIS-12/24 Laser Imaging System


Assign Character Set Numbers, Press EXECUTE
Press Go To Page for Alternate Display

          Family      Size       Density  Slant   National Subset

          01 Courier  10 Point   Regular          Standard
          02 Courier  10 Pitch L Regular          Standard
          03 Geneva   12 Pitch L Regular          Standard
           .
           .
           .
```

Figure 4-3. Font Index Screen

4. Use the RETURN key to move the cursor to any of the character sets displayed on the screen. Use the number keys to assign (or reassign) a character set number to a character set. Nine character set numbers can be assigned at any one time. To assign or reassign a number, position the cursor next to the character set and enter the number desired (01-09). If you want to continue making changes, press RETURN to move to the next character set.

5. When you are finished, write down the character set numbers for later references and press the EXECUTE key twice. The previous assignment of character set numbers is automatically canceled after you execute the change. The system then returns to the Printer Character Set Utilities menu.

6. Press the CANCEL key until you return to the main Peripheral Utilities menu.

7. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Deleting a Character Set

You can delete character sets from your system for a particular printer. However, if you delete a character set by using this feature, you must reinstall the character set before you can use it again.

Warning: The Delete a Character Set function is a destructive procedure. Deleted daisy and line printer fonts cannot be restored, and loadable fonts must be reinstalled from the diskette to be restored.

Note: You cannot delete 12 point PostScript fonts from the system. Refer to the section entitled "WP Postscript Font Sizing Utility" in this chapter for an explanation of the PostScript Font Sizing utility.

Procedure

1. With the main Peripheral Utilities menu displayed on the screen, position the acceptance block next to the System Device Standards option and press the EXECUTE key.

2. On the Printer Standards menu, position the acceptance block next to the Character Set Utilities option and press the EXECUTE key.

3. On the Printer Character Set Utilities menu, position the acceptance block next to the Delete a Character Set option and press RETURN. Then use the space bar to position the acceptance block next to the type of printer from which the character set is to be deleted. Press the EXECUTE key.

   Note: If your system does not support the selected printer type, the message "Requested Device not Supported" is displayed.

   If no tables exist for the printer selected, the system displays the message "No Tables for Device Requested".

   The next screen displays the character set index for the printer you selected.

4. Position the cursor next to the first one you want to delete and press the INSERT key. The acceptance block appears. Repeat this process until you have selected all the character sets you want to delete. Then press the EXECUTE key twice. The system then displays the message "Successful Operation" and the updated character set list.

5. Press the CANCEL key until the system returns to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Modifying Printer Translation Tables

Modifying printer translation tables lets you use the Character Set utility to reassign keyboard characters on a workstation so that the key will now print a new and different character. This is done by changing the numerical values of the keyboard character.

This section describes the two methods by which you can alter the printer translation tables by using the Character Set utility. The following two methods are used for both nonfont-loadable printers and font-loadable printers:

• The Substitution Method
• The Secondary Character Set Method

A third method uses glossary entries obtained from a diskette of special characters. These characters are supercopied from the diskette into a Glossary document so that they can be recalled into a document. A wide selection of diskettes is available; contact your Wang representative for more information.

Substitution Method For Nonfont-Loadable Printers

The substitution method lets you substitute (or reassign) keyboard characters for nonfont-loadable printers. With this method, you reassign one or more keys on the workstation keyboard to print a new character for a particular character set. For example, in Character Set 01 you can change the "at" symbol (@) so that it will print the "dagger" symbol (†). This means that whenever you press the @ key, the at symbol appears on the screen, but the dagger symbol prints when Character Set 01 is specified on the print menu.

Be sure to turn off all printers before performing this procedure.

Procedure

1. Position the acceptance block next to the System Device Standards option on the main System Standards menu, and press the EXECUTE key.

2. Position the acceptance block next to the Character Set Utilities option on the Printer Standards menu, and press the EXECUTE key.

3. Position the acceptance block next to the Width/Sequence Alteration option on the Printer Character Set Utilities menu, and press the RETURN key. Then use the space bar again to select the printer type. Press the EXECUTE key. The printer's character sets are displayed.

4. Use the space bar to select the character set in which you want to make a key substitution. Press the EXECUTE key. The Width/Sequence Alteration menu then appears as shown in Figure 4-4.

```
Integrated Information System Peripheral Utilities — Rel xx.xx.xx
Width/Sequence Alteration
Daisy Printer

Press Execute to Select one


     Character Set Selected: Standard U.S. Diablo


            ■ Characters

            _ Overstrike

            _ Double Overstrike

            _ Underscore

            _ Double Underscore
```

Figure 4-4. Width/Sequence Alteration Menu

The Width/Sequence Alteration menu shows five selections for daisy printers. This menu displays different selections depending on the type of printer you choose.

Characters and Overstrike are the most commonly used for reassigning, and the procedure to reassign is similar for both daisy and line printers. This section will present the procedure for reassigning characters that require one hammer stroke to print. The procedure is the same for Overstrike except that Overstrike requires two hammer strokes. The difference for reassigning Overstrike is explained in the Remarks section.

5. Position the acceptance block next to the Characters option and press the EXECUTE key. The Width/Sequence Alteration Characters screen then appears as shown in Figure 4-5.

```
Integrated Information System Peripheral Utilities — Rel xx.xx
Width/Sequence Alteration (Characters)
Daisy Printer


Press Execute to Record All Changes

    Character Set Selected:   Standard U.S. Diablo

    Screen Character .      Hex Code 20
    Font Position 61        Width 2          Hammer Energy 1
```

Figure 4-5. Width/Sequence Alteration Characters Screen

The Width/Sequence Alteration Characters screen displays screen characters, one at a time, along with their corresponding Hex Codes, Font Position, Width, and Hammer Energy value.

6. Locate and write down the hex code value of the new character you want to add to the keyboard. Refer to the Screen Character and Hex Code Table in Appendix B.

7. Use the RETURN key to position the cursor in the Hex Code field. Enter the hex code of the new character, and press the RETURN key. The character symbol and its values appear on the screen.

8. Write down the Font Position, Width, and Hammer Energy values for this character.

9. Select the keyboard character that you are reassigning by one of the following ways:

   - Use the NEXT SCRN and PREV SCRN keys to move through the Width/Sequence Alteration Characters screen until you find the character to be reassigned.

- If the character is accessible from the keyboard, you can enter the character in the Screen Character field and press the RETURN key. The values of the character to be reassigned are displayed.

Note: Write down the Character Set Number, Font Position, Width, and Hammer Energy value of the keyboard character that you are reassigning. You will use these values if you change the key back to its original character symbol.

10. Using the RETURN key, move the cursor to the Font Position, Width, and Hammer Energy fields, and enter the values for the new character.

11. Press the EXECUTE key twice to record the software change to the system disk. The Width/Sequence Alteration menu then reappears.

12. To make additional substitutions, select either Characters or Overstrike, press the EXECUTE key, and follow Steps 6 through 11.

13. Press the CANCEL key until you return to the main Peripheral Utilities menu.

Remarks

Overstrike — To change the Overstrike character, follow the same procedure as previously stated except, instead of reassigning the Font Position, Width, or Hammer Energy values, change the Primary Character and Accent Character hex codes. Because the Overstrike is a combination of two characters, the Primary Character and Accent Character fields contain the screen character's hex code for the individual characters that make up the overstrike.

The width of the entire overstrike character is determined by the width of the primary character of the overstrike. The primary character is usually the more predominant or wider character, so that the overstrike character prints properly in proportional space.

Use the Special Character Key — Once you have reassigned a key, you can use the special character key by pressing that key. All other character sets on the system are unaffected by the substitution.

Substitute Key Assignment — The substitute key assignment applies to all workstations on the system and remains in effect until you change it.

Test Changes — To test any change you made, create a document and use the special character in it. The keyboard character appears on the screen. However, when you send the document to the appropriate printer, the special character prints in the document.

To Return Key to Original Character — To return a key to its original character, follow this procedure:

a. Perform Steps 1 through 5 in the previous procedure.

b. Use the NEXT SCRN and PREV SCRN keys to find the characters you substituted.

c. Enter the original values contained in the fields displayed.

d. Once you have returned the fields to the original values, press the EXECUTE key twice.

e. Press the CANCEL key until you return to the main Peripherals Utilities menu.

Secondary Character Set Method For Nonfont-Loadable Printers

The secondary character set method shows you how to create a secondary character set that allows you to print special characters on nonfont-loadable printers.

To create a secondary character set, first copy a character set translation table to a new table. Then assign keyboard characters (a, b, c, d, etc.) to the special characters to be printed. The secondary character set also has a character set number, so that you can access it from the print menu. For example, Character Set 01 (Courier) might be the original, and Character Set 02 (Courier.sec) would contain the special characters.

Do not send a word processing document to print while performing these steps.

Procedure

1. On the main Peripheral Utilities menu, position the acceptance block next to the System Device Standards option and press the EXECUTE key.

2. On the Printer Standards menu, position the acceptance block next to the Character Set Utilities option and press the EXECUTE key.

3. On the Printer Character Set Utilities menu, position the acceptance block next to the Create New Table option and press the RETURN key. Then use the space bar again to position the acceptance block next to the printer type. Press the EXECUTE key.

4. On the Create New Table menu, position the acceptance block next to the Copy From Existing Table option and press the EXECUTE key.

5. The Font Copy Selection menu displays all the character sets loaded on the system. Using the space bar, select the character set you want to copy and modify and press the EXECUTE key. The Create New Table (Copy From Existing Character Set) menu has a field for Enter New Character Set Name.

6. Enter the name as displayed on the Character Set Selected line, but add a short identifier ("sec" for example) to indicate that it is the secondary character set.

7. Press the EXECUTE key twice. When the copy is completed, the message "Successful Operation" is displayed.

8. Press the CANCEL key twice. The Printer Character Set Utilities menu reappears.

9. Use the space bar to position the acceptance block next to the Width/Sequence Alteration option. Press the EXECUTE key.

10. On the Width/Sequence Alteration menu, select the character set you copied. The short identifier added to the name indicates that it is the secondary character set. Press the EXECUTE key.

11. From this same menu, select the Characters option and press the EXECUTE key.

12. Make a copy of one of the following lists that is appropriate for your needs:

List A: Daisy Printers	List B: Line Printers
Screen Character	Screen Character
Font Position	Hex Code
Width	Special Character
Hammer Energy	Font Position (Hex Code)
Special Character	
Font Position	
Width	
Hammer Energy	

13. Incorporate your list into columns of a table. (Refer to Tables 4-1 and 4-2.)

14. In the Screen Character column, list the keyboard characters that you want to use to provide access to the special characters. Using Appendix B, locate the values required and put those values into the table. Then record the special characters to be accessed. Using Appendix B again, find the values for the special characters and write them in the appropriate table columns.

Tables 4-1 and 4-2 show you how to use these lists. Table 4-1 uses screen characters 0, 2, and 3 to print the degree symbol, the umlaut accent, and the paragraph symbol, respectively, from Figure B-3 (the Wang 06 Daisy Print Wheel).

Table 4-1. Sample List for a Nonfont-Loadable Daisy Printer

Screen Character	Font Position	Width	Hammer Energy	Special Character	Font Position	Width	Hammer Energy
0	40	5	4	Degree	38	4	1
2	43	5	3	Umlaut	30	5	1
3	42	5	3	Paragraph	31	7	4

Table 4-2 uses screen characters D, -, and + to print the degree symbol, the less-than symbol, and the greater-than symbol, respectively, from Figure B-7.

Table 4-2. Sample List for a Nonfont-Loadable Line Printer

Screen Character	Hex Code	Special Character	Font Position (Hex Codes)
D	44	Degree	60
-	2D	Less Than	3C
+	2B	Greater Than	3E

15. Use the NEXT SCRN and PREV SCRN keys to move through the Width/Sequence Alteration Characters screen until you find the character to be replaced. Using the RETURN key to move the cursor to each field, enter the values for the special character.

16. Press the EXECUTE key twice to record the software change to the system disk. The Width/Sequence Alteration menu then reappears.

17. To make other special character assignments on your list, repeat Steps 11, 13, and 14. If you are finished making modifications, go to Step 16.

18. Press the CANCEL key until you return to the main Peripheral Utilities menu.

19. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Remarks

Secondary Character Set — The secondary character set is available at all workstations on the system.

Advantage — One advantage of using the secondary character set is that you can select many special characters for printing without substituting any of the existing keyboard characters.

Disadvantage — One disadvantage is that you can only use one character set (using the primary and secondary character sets) for printing a document, because both print menu character set fields are used.

Assigning a Character Set Number — To assign a character set number to the new secondary character set, follow the steps in the Section entitled "Assigning and Viewing Character Set Numbers".

Using the Special Characters — You can now use the special characters. When creating or editing a document, press the STOP key to specify the secondary character set. Then type the screen character from the appropriate list you created in Step 12. Press the STOP key again to return to the primary character set. The stop graphic occupies a position on the screen but does not occupy a position in the printed text.

Note: The font always returns to the default font after a page break.

Printing Your Document — To print your document, enter the primary and secondary character set numbers on the print menu, along with all your other print information. Press the EXECUTE key. The printer prints using both character sets.

Substitution Method For Font-Loadable Printers

The substitution method lets you substitute (or reassign) keyboard characters for font-loadable printers such as the 5577, 5578, LPS8, LPS-12, LIS-12/24, LM900, LDP8, and LCS15.

Be sure to turn off all printers before performing this procedure.

Procedure

1. On the main WP Standards menu, position the acceptance block next to the System Device Standards option and press the EXECUTE key.

2. On the Printer Standards menu, position the acceptance block next to the Character Set Utilities option and press the EXECUTE key.

3. On the Printer Character Set Utilities menu, position the acceptance block next to the Width/Sequence Alteration option and press the RETURN key. Then use the space bar again to select the printer type (LIS-12/24 is used for an example). Press the EXECUTE key.

4. The Font Index — Width/Sequence Alteration screen is displayed. Use the space bar to select the font for which you want to make a key substitution. Press the EXECUTE key. The Width/Sequence Alteration menu appears.

   Note: Although Overstrikes appears as a menu selection for Wang printers 5577, 5578, and LM900, these printers do not utilize any overstrike characters. Every character in font-loadable printer tables is directly accessible. Therefore, this discussion deals only with the Characters selection.

5. On the Width/Sequence Alteration menu, position the acceptance block next to the Characters option and press the EXECUTE key. The Width/Sequence Alteration (Characters) screen is displayed as shown in Figure 4-6.

VS/IIS AND OIS WP

```
Integrated Information System Peripheral Utilities — Rel xx.xx.xx
Width/Sequence Alteration (Characters)
LIS-12/24 Laser Imaging System


Press Execute to Record All Changes

        Family      Size      Density  Slant    National Subset
        Courier     12 Pitch  Regular  Italics  Standard

        Screen Character .  Hex Code 20

        Font Position 20
```

Figure 4-6. Width/Sequence Alteration (Characters) Screen

The Width/Sequence Alteration (Characters) screen displays screen characters, one at a time, along with the corresponding hex codes. The Font Position field also contains the hex code of each character.

6. Choose an infrequently used key that you want to reassign by using one of the following methods:

   - Use the NEXT SCRN and PREV SCRN keys to move through the Width/Sequence Alteration Characters screen until you find the character to be reassigned.

   - Use the RETURN key to position the cursor in the Hex Code field, enter the hex code of the character, and press the RETURN key.

   - If the character is accessible from the keyboard, you can enter the character in the Screen Character field and press the RETURN key.

   Note: Write down the Character Set Number and Font Position of the keyboard character that you are reassigning. You will use these values if you change the key back to its original character symbol.

7. Determine the two-digit hex code for the special character you want to be the new character on the key.

8. Using the RETURN key to move the cursor to the Font Position field, enter the hex code of the special character.

9. Press the EXECUTE key twice to record the software change to the system disk. The Width/Sequence Alteration menu then reappears.

10. To make additional substitutions, select the Characters option again and press the EXECUTE key. Repeat Steps 1 to 9. When you are finished making modifications, go to Step 11.

11. Press the CANCEL key until you return to the main Peripheral Utilities menu.

12. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Remarks

Use the Special Character Key — After you have reassigned a key, you can use the special character by pressing that key. All other character sets on the system are unaffected by the substitution.

Test Changes — To test any change you made, create a document and use the special character in it. The keyboard character appears on the screen. However, when you send the document to print, the special character prints in the document.

To Return a Key to the Original Character — To return a key to its original assignment, follow the next procedure.

a. Perform Steps 1 to 6 in the previous procedure.

b. Use the NEXT SCRN and PREV SCRN keys to find the character you substituted.

c. Enter the original value contained in the Font Position field.

d. After you enter the original value, press the EXECUTE key twice.

e. Perform Steps 11 and 12.

CHANGING PRINTER PARAMETERS

You can change printer parameters for either a specified printer or all the printers on the system. If you select the Unit Standards option from the main Peripheral Utilities menu, you can change parameters for a specific printer. If you select the Printer Parameter Alteration option from the Peripheral Utilities Printer Standards menu, you change parameters for all printers connected to your system. Figure 4-7 shows the Printer Parameter Alteration menu.

```
Integrated Information System Peripheral Utilities — Rel xx.xx.xx
Printer Parameter Alteration


          Press EXECUTE to Select Indicated Choice




                ■ Word Processing

                _ Data Processing (seen on OIS only)

                _ Data Processing Tab Settings (seen on OIS only)
```

Figure 4-7. Printer Parameter Alteration Menu

Note: Data Processing and Data Processing Tab Setting options are available on OIS systems only.

The following sections explain each of the choices in Figure 4-7.

Changing Word Processing Printer Parameters

You can change Word Processing printer parameters on either a system-wide or single-unit basis.

Note: After a change has been made to a particular printer, any additional changes made on a system-wide basis do not affect that printer.

To make the changes, perform the following steps.

Procedure

1. On the Printer Parameter Alteration menu, position the acceptance block next to the Word Processing option and press the EXECUTE key. The Word Processing Print Parameter Alteration screen, shown in Figure 4-8, then appears. This screen lists the system default values.

```
Integrated Information System Peripheral Utilities — Rel xx.xx.xx
Printer Parameter Alteration
Word Processing Print Parameter Alteration

        Press EXECUTE to Record All Changes


        Quarter Line Character   Q         DECIMAL ALIGNMENT
        Half Line Character      H           1st Option .
                                             2nd Option )
                                             3rd Option .

                                           SENTENCE TERMINATOR
                                             1st Option .
                                             2nd Option ?
                                             3rd Option !
                                             4th Option :
```

Figure 4-8.   Word Processing Print Parameter Alteration Screen

2. Use the RETURN key and the space bar to move the cursor to the first selection you want to change. Make the change and press the RETURN key. The cursor then moves to the next selection.

   If you have chosen the Unit Standards option on the main Peripheral Utilities menu to make your changes, the following print options appear: Manual Paper Change and Automatic Paper Change for the LIS and LCS printers and Bold and Expanded for the LIS printer.

   The following list explains these printer options:

   Bold — The printed characters appear in heavy type (LIS printer).

   Expanded — The printed characters are twice as tall and wider than normal characters (LIS printer).

   Automatic Paper Change — The printer stops and requests a paper change whenever the page length value changes between print jobs (LIS and LCS printers).

   Manual Paper Change — The printer only stops when a Change Paper command is encountered in the text of a document or when the paper supply runs out (LIS and LCS printers).

3. Continue making any changes and press the EXECUTE key after you make the last change. The system then displays the prompt "Press EXECUTE again to record all changes".

4. Verify your changes. Use the TAB key to go back to any fields that are incorrect. Press the EXECUTE key when completed. The system redisplays the Printer Parameter Alteration menu.

5. Press the CANCEL key until you return to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Changing Data Processing Printer Parameters (OIS Systems Only)

You can change Data Processing printer parameters on either a system-wide or single-unit basis. To make the changes, perform the following steps.

Procedure

1. On the Printer Parameter Alteration menu, position the acceptance block next to the Data Processing option and press the EXECUTE key.

2. The Data Processing Print Parameter Alteration screen, shown in Figure 4-9, appears. This screen lists the system default values.

```
Office Information System Peripheral Utilities — Rel xx.xx.xx
Printer Parameter Alteration
Data Processing Print Parameter Alteration


            Press EXECUTE to
            record all changes


            Left Margin (Columns)  000      Right Margin (Columns)  131
            Paper Width (Columns)  131      Paper Length (Lines)    66
            Printable Lines/Page   060


            Paper Selection                 Pitch Selection

            _ Continuous Paper              _ Ten Pitch
            _ Standard                      _ Twelve Pitch
            _ Form 1                        _ Fifteen Pitch
            _ Form 2                        _ Proportional Pitch
            _ Envelopes
```

Figure 4-9. Data Processing Print Parameter Alteration Screen

3. Use the RETURN key and the space bar to move the cursor to the first selection you want to change. Make the change and press the RETURN key. The cursor then moves to the next selection. Continue making any changes and press the EXECUTE key after you make the last change.

4. The system then displays the prompt "Press EXECUTE again to record all changes." Verify your changes. Use the TAB key to go back to any fields that are incorrect. Press the EXECUTE key when completed. The system redisplays the Printer Parameter Alteration menu.

5. Press the CANCEL key until you return to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

Changing Data Processing Tab Settings (OIS Systems Only)

You can change Data Processing printer parameters on either a system-wide or single-unit basis. To make the changes, perform the following steps.

Procedure

1. On the Printer Parameter Alteration menu, position the acceptance block next to the Data Processing Tab Settings option and press the EXECUTE key.

2. The Data Processing Print Parameter Alteration (Tab Setting) screen, shown in Figure 4-10, then appears. This screen lists the system default values.

```
Office Information System Peripheral Utilities — Rel xx.xx.xx
Printer Parameter Alteration
Data Processsing Print Parameter Alteration

      Press EXECUTE to
      record all changes

      Select Horizontal Tab Positions        Select Vertical Tab Positions
            1st Position  016                       1st Position  06
            2nd Position  032                       2nd Position  12
            3rd Position  048                       3rd Position  18
            4th Position  064                       4th Position  24
            5th Position  080                       5th Position  30
            6th Position  096                       6th Position  36
            7th Position  112                       7th Position  42
            8th Position  128                       8th Position  48
            9th Position  144                       9th Position  54
```

Figure 4-10. Data Processing Print Parameter Alteration (Tab Setting) Screen

3. Use the RETURN key to move the cursor to the first tab position you want to change. Make the change and press the RETURN key. The cursor then moves to the next selection. Continue making any changes and press the EXECUTE key after you make the last change. The system then displays the prompt "Press EXECUTE again to record all changes".

4. Verify your changes. Use the TAB key to go back to any fields that are incorrect. Press the EXECUTE key when completed. The system redisplays the Printer Parameter Alteration menu.

5. Press the CANCEL key until you return to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

LIS-12/24 FONT AUTO-CREATION UTILITY

The LIS-12/24 Font Auto-Creation utility converts Laser Printer System (LPS-12) fonts to Laser Imaging System (LIS) format. Be sure to turn off all printers before performing this function.

Note: If you have deleted an LIS-12/24 character set through the Delete a Character Set function, you must delete the LIS-12/24 font file before you can run the Conversion Utility to recreate that font and character set entry.

Procedure

1. On the Peripheral Utilities Printer Standards menu, position the acceptance block next to the LIS-12/24 Font Auto-Creation Utility option and press the EXECUTE key.

2. The system displays the message "Calculating Execution Time." During this time, the system determines what LPS-12 fonts are currently on the system and how long it will take to convert them to the LIS-12/24 format.

3. When the system has determined the conversion time, the message "Approximate Completion Time: xx minutes" is displayed. If the LIS-12/24 fonts already exist, the system displays the prompt "No Conversion Necessary — Press CANCEL to Return to Previous Menu".

   Note: On VS systems, the utility displays a message that at least one minute of processing time is required even if no fonts can be created.

4. If you want to run the conversion at this time, press the EXECUTE key. If you do no want to run the conversion, press the CANCEL key. The Peripheral Utilities Printer Standards menu reappears. When the conversion process is complete, the Peripheral Utilities Printer Standards menu reappears.

5. Press the CANCEL key until you return to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

After you have run this utility, it is important to assign character set numbers to the converted fonts, as described in the section entitled "Character Set Utilities." Be sure to assign Character Set 01, as this is the default character set for the LIS-12/24 printer.

WP FONT REGENERATION UTILITY

The WP Font Regeneration Utility builds the WP font index for the LCS15, LDP8, 5578, and LM900 printers. You run this utility after installing or reinstalling WP Peripherals.

To run the WP Font Regeneration utility, access the Peripheral Utilities Printer Standards menu, select the WP Font Regeneration option, and press EXECUTE.

The system begins to run the utility. The Message "(Update in Progress)" remains on the screen during the update. The update may take a few minutes to run.

WP POSTSCRIPT FONT SIZING UTILITY

The PostScript Font Sizing utility allows you to size PostScript fonts (for any PostScript printer such as the LCS15) to any whole point size from 6 to 36 points.

This utility uses the 12 point font selected by you, generates the new size font files, and inserts the font information into the appropriate font index.

For standard word processing, the utility adds the resultant sized fonts to the WP font catalog, but does not activate them; you must still assign the character set numbers.

To create new point-size fonts, perform the following steps.

Procedure

1. From the System Device and Unit Standards menu, select the System Device Standards option and press EXECUTE. The WP Peripheral Utilities Printer Standards menu, shown in Figure 4-11, appears.

```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
Printer Standards


Press EXECUTE to Select Indicated Choice




        ■ Character Set Utilities
        _ Printer Parameter Alterations
        _ LIS-12/24 Font Auto-Creation Utility
        _ PostScript Font Sizing Utility
        _ WP Font Regeneration Utility
```
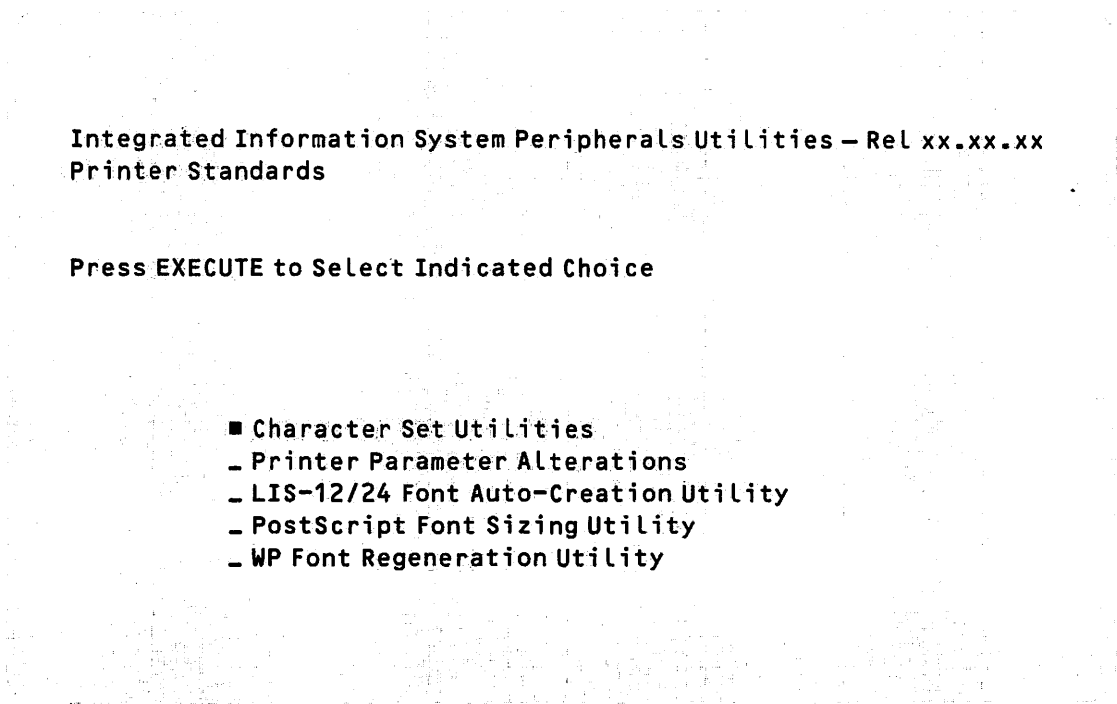
Figure 4-11. WP Peripheral Utilities Printer Standards Menu

2. Select the PostScript Font Sizing Utility option and press EXECUTE. The WP Printer Selection Screen, shown in Figure 4-12, appears.

```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
PostScript Font Sizing Utility

   Press EXECUTE to select ONE

                  ■ LCS15
```

Figure 4-12.   WP Printer Selection Screen

3. Select the LCS15 option and press EXECUTE. The WP Font Selection screen shown
    in Figure 4-13, appears. WP is limited to 128 fonts for the LCS15.


```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
PostScript Font Sizing Utility

   Press INSERT to make selections, then Press EXECUTE

   Family          Size        Density   Slant     National Subset

   _ Times-Roman   12 Point    Regular   Italic    Standard
   _ Times-Roman   12 Point    Bold      Italic    Standard
   _ Helvetica     12 Point    Regular   Oblique   Standard
   _ Helvetica     12 Point    Bold      Oblique   Standard
   _ Courier       12 Point    Regular   Oblique   Standard
   _ Courier       12 Point    Bold      Oblique   Standard
      .
      .
      .
```

Figure 4-13.   WP Font Selection Screen

4. Select the font(s) for which you want to generate new-size font files. You should select *only* the font(s) you intend to use since a large font index slows down system processing time and font indexing.

5. Press EXECUTE. The WP Point Size and Orientation Selection screen, shown in Figure 4-14, appears.

```
Integrated Information System Peripherals Utilities — Rel xx.xx.xx
PostScript Font Sizing Utility

      Press INSERT to make selections, then Press EXECUTE   Printer: LCS15

      Portrait Point Sizes           Landscape Point Sizes

         _6    _16    _26              _6    _16    _26
         _7    _17    _27              _7    _17    _27
         _8    _18    _28              _8    _18    _28
         _9    _19    _29              _9    _19    _29
        _10    _20    _30             _10    _20    _30
        _11    _21    _31             _11    _21    _31
        _12    _22    _32             _12    _22    _32
        _13    _23    _33             _13    _23    _33
        _14    _24    _34             _14    _24    _34
        _15    _25    _35             _15    _25    _35
                      _36                           _36

      ■ Create
      _ Create/Recreate
```

Figure 4-14.   WP Point Size and Orientation Selection Screen

6. Select the point size and orientation(s) you want the utility to create for the font(s) you selected on the WP Font Selection screen. You should select *only* the point size and orientation(s) you intend to use since a large font index slows down system processing time.

7. Select the Create or Create/Recreate option at the bottom of the screen. When you select Create (the default), the utility creates the new fonts according to your sizing specifications if they do not already exist. When you select Create/Recreate, the utility creates any fonts that did not previously exist and rebuilds any pre-existing fonts that were chosen. The rebuilding process erases any changes you may have made to a font translation table.

8. Press EXECUTE. As the utility creates a new font, status information appears on the WP Plus Point Size and Orientation Selection screen as shown in Figure 4-15.

```
              PostScript Font Sizing In Progress     Printer:  LCS15

         Family          Size      Density  Slant    National Subset
         Times-Roman     12 Point  Regular  Italic   Standard

         Portrait Point Sizes              Landscape Point Sizes

          _ 6    _ 16    _ 26       _ 6     _ 16    _ 26
          _ 7    _ 17    _ 27       _ 7     _ 17    _ 27
          _ 8    ■ 18    _ 28       _ 8     _ 18    _ 28
          _ 9    _ 19    _ 29       _ 9     _ 19    _ 29
          ■ 10   _ 20    _ 30       _ 10    _ 20    _ 30
          _ 11   _ 21    _ 31       _ 11    _ 21    _ 31
          _ 12   _ 22    ■ 32       _ 12    _ 22    ■ 32
          _ 13   _ 23    _ 33       _ 13    _ 23    _ 33
          _ 14   _ 24    _ 34       ■ 14    _ 24    _ 34
          _ 15   _ 25    _ 35       _ 15    _ 25    _ 35
                         _ 36                       _ 36

         ■ Create
         _ Create/Recreate        Point Sizing 32 Portrait
```

Figure 4-15.   WP Point Size and Orientation Selection Screen With Status Information

If you selected the Create option and chose a point size and orientation that already exists, the message "Already exists" appears briefly on the screen. When the font-sizing process is complete, you are returned to the WP Printer Standards menu.

SINGLE FONT DISKETTE UPDATE (OIS SYSTEMS ONLY)

The Single Font Diskette Update function updates your font diskettes when a format revision is issued. To perform this function, follow these steps.

Procedure

1. On the Peripheral Utilities Printer Standards menu, position the acceptance block next to the Single Font Diskette Update option and press the EXECUTE key. The system then prompts you to "Mount Diskette to be Updated".

2. Mount the font diskette you want to update in the disk drive and close the drive door. Press the EXECUTE key twice.

3. During processing, the system displays the message "Update in Progress." When processing is complete, the system displays the message "Update Completed".

   It is helpful to mark the diskette as updated and include the date. You are then given the choice of updating more font diskettes or returning to the Peripheral Utilities Printer Standards menu.

4. To update additional font diskettes, press the EXECUTE key. Then repeat Steps 2 and 3.

5. When you are finished, press the CANCEL key until you return to the main Peripheral Utilities menu.

6. Press the CANCEL key and then press the EXECUTE key to exit the Peripheral Utilities function.

VS/IIS AND OIS WP

Chapter 5
USING VS/IIS AND OIS WP WITH POSTSCRIPT AND LASERJET PRINTERS

OVERVIEW

PostScript (LCS15) and LaserJet (LDP8) printers provide you with a wide range of typographic fonts from which to choose. They also support the standard Wang typewriter fonts you can purchase from WangDirect.

Due to the various point sizes of typographic fonts, WP handles these fonts differently than the standard-pitch typewriter fonts. For example, WP uses a formula instead of the Lines/Inch selection on the Print Default Parameters menu to determine the vertical line spacing for typographic fonts. The formula prevents lines of different point-size text from overlapping one another when you use single or higher format line spacing.

WP lets you use one or two fonts in a document. You use stop codes to indicate the text you want in the secondary font. You specify which font(s) you want the printers to use by entering the appropriate character set number(s) in the WP Print Document menu.

At installation, the default font for the LCS15 is *Courier 12-Point Portrait*. The default font for the LDP8 is *Courier 10-pitch Portrait*. (These two fonts are approximately equivalent in size to each other.)

You can determine whether a font is a typographic or a typewriter font through the WP font index. You access the font index through the WP Peripheral Utilities. If you have an OIS, you access WP Peripheral Utilities from the OIS main menu. If you have a VS, you access WP Peripheral Utilities with the START program in the PUTIL library (use the Run Program or Procedure function on the WP Utilities screen).

WP FONT INDEX

The WP font index format in WP Peripheral Utilities provides the more descriptive format. The *Size* column indicates whether the font is sized by pitch or point. If a font has a point size, it is a typographic font. If a font has a pitch size, it is a standard Wang typewriter font.

A sample WP Font Index screen with both kinds of fonts is shown in Figure 5-1.

```
Integrated Information Systems Peripheral Utilities — Rel #.#
Font Index — Display/Selection
LCS15 Laser Composition System

Assign Character Set Numbers, Press Execute
Family                 Size         Density    Slant      National Subset
01 Courier             12 Point     Regular               Standard
02 AvantGarde Book     12 Point     Regular               Standard
03 Palatino            07 Point     Regular               Standard
04 Times-Roman         12 Point     Bold       Italics    Standard
05 Helvetica           12 Point     -Regular              Standard
06 NewCenturySchlbk    16 Point     Bold                  Standard
07 Helvetica           24 Point     Regular    Oblique    Standard
08 Helvetica           12 Point L   Bold       Oblique    Standard
09 Courier             12 Point     Regular               Standard
__ Times-Roman         12 Point     Regular    Italics    Standard
__ Courier             10 Pitch     Bold                  Standard
__ Courier             12 Pitch L   Regular               Standard
__ Times               PS Pitch     Bold                  Standard
__ Palatino            18 Point     Bold                  Standard
```

Figure 5-1.   Sample WP Font Index Screen

PORTRAIT AND LANDSCAPE PRINTING

Each font has either a portrait or a landscape orientation. Portrait is the standard vertical format and landscape is the horizontal format. The landscape orientation is useful for reports or wide tables. If a font uses the landscape orientation, the letter L appears in its size description in the font index (refer to Figure 5-1).

You can mix portrait and landscape fonts within a document. However, do not mix the two orientations on the same page.

VERTICAL LINE SPACING

The way WP calculates vertical line spacing affects the position of the footer and vertical spacing between lines of text.

WP calculates the vertical line spacing of text differently for typewriter and typographic fonts. However, when you mix typewriter and typographic fonts (indicated by the character set numbers you specify), on a line, in a document, WP applies the typographic font line spacing rules to the typewriter font.

Typewriter Fonts

When you use only typewriter fonts, WP uses the Lines Per Inch selection (6 or 8) you make on the WP Print Document menu to determine the vertical line spacing of text and format line spacing.

However, if you use a typewriter font and a typographic font in a document, WP automatically uses the 6-lines-per-inch setting for the typewriter font (the 8-lines-per-inch setting is disabled in this situation). If you only enter a character set number of a typographic font in the WP Print Document menu but never use it in the document, WP still defaults to 6 lines per inch for the typewriter font.

The number of lines you can fit on a page depends upon the orientation of the typewriter font, the Lines Per Inch selection you make, and the paper size. Refer to the tables in Appendix C for the printable lines per page for the different paper sizes.

Typographic Fonts

When you use a typographic font, WP uses a line spacing formula to determine the vertical line spacing of the text. The formula determines the amount of space from the base of one line of text to the base of the next line of text.

The typographic vertical line spacing formula ensures that lines of text with different point sizes do not overlap one another when you use single or larger line spacing. The formula is as follows:

Two-thirds of the maximum point size (the largest point size of a character or control character) of the current line plus one-third of the maximum point size of the previous line equals the amount of space from the base of the previous line to the base of the current line when you use single-line spacing (refer to Example 5-1).

Example 5-1. Different Point Sizes and Single-Line Spacing

36 point size text.
This line of text has 12 point size text in it.

2/3 of the current maximum point size (12) =   8
1/3 of the previous maximum point size (36) = + 12
                                               20

(The amount of space from the base of the previous line to the base of the current line equals 20 points.)

Note: The vertical line spacing of blank lines (a line that does not contain any text, but has just a return graphic on it) does not follow the line spacing formula but is based on 6 lines per inch. WP considers each blank line, in terms of point size, to be 12 points.

To illustrate how the order of the sentences affects the line spacing, the sentences in Example 5-1 are reversed in Example 5-2.

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Example 5-2.   Reversing the Order of the Sentences in Example 5-1

This line of text has 12 point size text in it.
36 point size text.

2/3 of the current maximum point size (36) =   24
1/3 of the previous maximum point size (12) = + 4
                                                                   —
                                                                   28

(The amount of space from the base of the previous line to the base of the current line equals 28 points.)

If you have the same point size on two lines and are using single-line spacing, the base-to-base spacing equals the point size of the two lines (refer to Example 5-3).

Example 5-3.   Same Point Sizes and Single-Line Spacing

The size of the text in this line is 12 point.
The size of the text in this line is also 12 point.

2/3 of the current maximum point size (12) =   8
1/3 of the previous maximum point size (12) = + 4
                                                                   —
                                                                   12

(The amount of space from the base of the previous line to the base of the current line equals 12 points.)

If you are using line spacing other than single-line spacing, multiply the line-spacing value in the format line times the sum of the two-thirds plus one-third formula. Refer to Example 5-4. The Draft option in the Version field on the Document Print menu doubles the line spacing on a printout and therefore doubles the result of the typographic vertical line spacing formula.

Example 5-4.   Same Point Sizes and One-and-a-Half-Line Spacing

---

The size of the text in this line is 12 point.

The size of the text in this line is also 12 point.

2/3 of the current maximum point size (12)   =   8
1/3 of the previous maximum point size (12) = + 4
$$\frac{}{12} \times 1.5 = 18$$

(The amount of space from the base of the previous line to the base of the current line equals 18 points.)

Note: If you use a typographic font smaller than 12 point on Line 1 on a page, the PostScript and LaserJet printers position the baseline of the text on the paper as if it were 12 point.

The number of lines you can fit on a page depends upon the orientation of the typographic font, its point size, and the paper size. Refer to Table C-6 in Appendix C for the printable lines per page for some of the different point sizes.

Footer Position

WP calculates the position of the footer based on 6 lines per inch. For example, if you enter 54 as the footer line number, WP prints the footer 9 inches (229 mm) from the top of the paper (54 divided by 6 equals 9). You specify the footer line number in the WP Print Document menu.

Dual Columns

The vertical line spacing in dual-column printing is fixed across each line. If the primary or secondary character set is a typographic font, WP uses the typographic vertical line spacing formula to determine the base-to-base line spacing. Refer to Figure 5-2 for an illustration of how dual columns affect the vertical line spacing of the text.

Figure 5-2 contains a 12-point paragraph printed in a single-column format and then in dual-column format. Since the text in the second column is 20 point, the line spacing of the 12-point paragraph is adjusted accordingly.

VS/IIS AND OIS WP

This paragraph is in 12 point.
The dual-column feature is very
useful.

This paragraph is in 12 point.

The dual-column feature is very

useful.

This paragraph is in
20 point. It is the
maximum point size
in each line in the
dual-column format.

Figure 5-2. Vertical Line Spacing in Dual-Column Printing

Superscripts and Subscripts

WP places superscripts slightly above the standard line and subscripts slightly below it. WP bases the offset between the superscript or subscript text and the standard line on the pitch or maximum point size of the standard line.

Because subscript and superscript text may overlap when using single-line spacing, use at least one-and-a-half-line spacing when text includes superscripts or subscripts. See Example 5-5.

Example 5-5. Overlapping Superscript and Subscript Text in WP

Standard textSuperscript textStandard textSubscript textStandard text
Standard textSubscript textStandard textSuperscript textStandard text

If you use only typewriter fonts, WP places superscripts one quarter of a line above the standard line and subscripts one quarter of a line below it. (WP checks the character set numbers you enter in the WP Print Document menu to determine if you are using typewriter and/or typographic fonts.)

Printing text with superscript or subscript text in small point sizes may cause lines of text to overlap.

Zero Line Spacing

When you use zero line spacing, the PostScript and LaserJet printers print each line of text on top of one another. If you are going to use different point-size fonts in the zero line spaced text, put the largest point-size text on the first line after the zero line space format line. (Refer to Example 5-6 in which the line with the 3 X's is entered first.) WP uses the maximum point size in the first line after the zero line space format line to determine the position of the baseline of the single line of text. It does not adjust the baseline position for different (larger) point-size text on subsequent lines.

Example 5-6. First Line With the Largest Point-Size Text

This is an example of zero line spacing.

If the largest point size is not on the first line after the format line and the zero line spaced text starts at the top of the page, the PostScript printer may clip the top portions of the characters (refer to Example 5-7), while the LaserJet printer does not print the second line. If the largest point-size text is not on the first line after the format line and text precedes the zero line spaced text, the large point-sized characters may overlap the text above it.

Example 5-7. First Line Without the Largest Point-Size Text

This is an example of zero line spacing.

Vertical Overflow

When you print pages that contain large point-size text, all the text may not be able to fit on the page. Since the screen display does not reflect the point size of a font or the spacing between the lines, it is difficult to determine whether or not the text can fit on the page when it is printed. If all the text cannot fit on the page, the system prints the overflow text on one or more additional pages. The overflow text may not retain the line spacing of the original page.

HORIZONTAL SPACING

Horizontal spacing affects the printable characters per line, the width of the left margin and format line, and illegal-width conditions.

Printable Characters Per Line

The factors that determine the number of characters that can fit on a single line depend upon whether you are using a typewriter or typographic font.

Typewriter fonts — The number of characters that fit on a single line depends upon the pitch size, the orientation of the font (portrait or landscape), and the printable-width area of the paper. Refer to the tables in Appendix C for the printable characters per line for the different paper sizes.

Typographic fonts — The number of characters that fit on a single line depends upon the point size, the font family, the orientation of the font, and the printable-width area of the paper. The larger the point size, the fewer characters you can fit on a line. Refer to Appendix B to see how the widths of characters differ in the typographic font families.

Format Line

The pitch WP uses to calculate the width of the format line depends upon whether you use a typewriter or typographic font.

Typewriter fonts — WP uses the pitch of the primary character set (font) to determine the width of the first format line. For example, if the primary character set is 10 pitch (10 characters to the inch), each space in the format line is equal to 1/10 inch (3 mm). If the primary character set is a proportionally spaced (PS) pitch font, WP defaults to 12 pitch. If there are additional format lines in the document, WP uses the pitch of the font that precedes them to calculate the width of the format lines.

Typographic fonts — WP uses 12 pitch to calculate the width of the format line. As a result, each space in the format line always equals 1/12 inch (2 mm).

Note: The line spacing of a format line does not take effect until the second line below it. The first line after the new format line has the line spacing of the previous format line.

Right Justification With Large Typographic Fonts

The right justification feature allows you to align text at the right margin. In order to use this feature with large typographic fonts (any font greater than 14 points), you must adjust the format line by adding spaces between the dec tab and the return character. More spaces will be required after the dec tab as you increase the point size of the font.

Left Margin

The pitch WP uses to calculate the width of the left margin depends upon whether you use a typewriter or typographic font.

Typewriter fonts — WP uses the pitch of the primary character set (font) and the left margin you specify on the WP Print Document menu to calculate the width of the left margin. To calculate the width of the left margin, divide the left margin by the pitch. For example, if you specify 10 as the left margin and the primary character set is 12 pitch, the width of the left margin equals 10/12 or 5/6 of an inch (21 mm).

Typographic fonts — WP uses 12 pitch and the left margin you specify on the WP Print Document menu to calculate the width of the left margin. To calculate the width of the left margin, divide the left margin by 12 pitch. For example, if you specify 10 as the left margin, the width of the left margin equals 10/12 or 5/6 of an inch (21 mm).

Note: All Laser printers automatically leave approximately a 1/4-inch left margin. As a result, you should add 1/4 inch to the width you calculated to get the actual width of the left margin. For example, 5/6 inch (21 mm) plus 1/4 inch (6 mm) equals 1 1/12 inches (28 mm).

Illegal-Width Conditions

WP uses the left margin and the format line to determine whether an illegal-width condition exists. If the combined width of the left margin and format line exceed the printable-width area of the paper, and you attempt to print characters in this area, the printer prints the words, Illegal Width, on the page and terminates the printout.

For example, assume you are using a typographic font and letter-size paper that has a printable-width area of 8.00 inches (203 mm). If your left margin value is 10, its width equals 5/6 inch (21 mm). (WP uses 12 pitch to calculate the width of the left margin for typographic fonts.) If your format line is 90 spaces long, its width equals 7 1/2 inches (191 mm). (WP uses 12 pitch to calculate the width of the format line for typographic fonts.) The combined width equals 8.33 inches (212 mm) which exceeds the 8.00-inch (203-mm) printable-width area. When you attempt to print characters in the area that exceeds the printable-width of the paper, an illegal-width condition results.

TEXT ATTRIBUTES

The PostScript and LaserJet printers react differently, from other laser printers, when applying text attributes to typographic fonts. The following sections describe these differences.

Bold

Both the LCS15 and LDP8 print text with the bold attribute as boldface (darkened) text. They do not support expanded bold print like the LPS-12, and LIS-12/24. If you use typographic fonts, the density of the bold text varies depending upon the point size of the text. When you use large point-size text, the bold characters are only slightly darker than the regular text. If you want to emphasize the difference between the bold and regular large point-size text, use a bold font as the secondary character set instead of the bold attribute.

To apply the bold attribute, put an underscored superscript graphic (O) before and after the text you want to print in boldface text. You can underscore or double underscore text to which you have applied the bold attribute.

Underscore and Double Underscore

Both the LCS15 and LDP8 printers print the underscore or double underscore just below the baseline of the text. If a character has a descender, it overlaps the underscore or double underscore.

VS/IIS AND OIS WP

The LCS15 and LDP8 printers differ in the way they print the thickness of the underscore and double underscore:

LCS15 — The LCS15 prints the thickness of the underscore differently for typewriter and typographic fonts.

Typewriter fonts — The thickness of the underscore and double underscore remains the same regardless of the pitch size of the typewriter font.

Typographic fonts — The thickness of the underscore and double underscore is based on the maximum point size in the region you apply the attribute(s). The larger the point size, the thicker the underscore or double underscore. If a line has text in different point sizes, the underscore or double underscore may appear farther away from the smaller point-size text since WP bases its size and position on the largest-point size on the line as shown in Example 5-8.

Example 5-8.   Underscore Style on Typographic Fonts in WP

underscore 12 point text

underscore 12 point text 36 point text

LDP8 — The LDP8 printer prints the thickness of the underscore and double underscore in a similar manner for both typewriter and typographic fonts. The thickness remains the same regardless of any change to the pitch size of a typewriter font or to the point size of a typographic font.

To apply the underscore attribute, use the SHIFT and the Underscore key, and underscore the desired text. To apply the double-underscore attribute, put an underscored subscript graphic (l) before the text you want the LCS15 to double underscore, underscore the text itself, and then put two underscored subscript graphics (ll) at the end of the text.

Strike thru

Both the LCS15 and LDP8 print the strike thru character in a similar manner. The size of the strike thru character depends upon the size of the character. The larger the text, the larger the strike thru character as shown in Example 5-9.

Example 5-9. Strike thru Style on Typographic Fonts in WP

strike/thru/n2/point/text/ **/36/point/text**

When you use a fixed-pitch typewriter font or a monospaced typographic font, such as Courier, WP prints one strikethru character on each character you specify. When you use a PS font, WP evenly distributes the strikethru characters based on the length of the text string you specify.

To apply the strikethru attribute, put two underscored subscript graphics (↓↓) before the text you want the printer to strike through, underscore the text itself, and then put one underscored subscript graphic (↓) at the end of the text.

PRINTING DOCUMENTS

When you use the LCS15 and LDP8, you print WP documents the same way you do with any other printer WP supports. However, when you print WP documents, you should take into account the special considerations that follow.

Underscored Stop Codes

When the LCS15 encounters an underscored stop code (■) in a document, it stops printing and displays a CHANGE PAPER message on the control panel. The underscored stop code gives you an opportunity to change paper in the middle of printing a document. To continue printing, you have to press the SELECT button on the control panel.

The LDP8 does not have the capability of recognizing underscored stop codes and does not stop when it encounters one.

LCS15 Paper Change Options

The LCS15 printer has two paper change options: automatic and manual. When the option is set to automatic, the printer stops and requests a paper whenever the page length value changes between print jobs. When the option is set to Manual, the LCS15 stops only when it encounters a stop reference (WP Plus) or underscored stop code (WP).

Note: The Paper Change option is the same for WP Plus and WP. As a result, when you change the Paper Change option in WP Plus, the system also applies the change to WP and vice versa.

WP Print Document Menu

You use the WP Print Document menu as shown in Figure 5-3 to issue print requests.

VS/IIS AND OIS WP

```
                              PRINT DOCUMENT

Document ID:     0053v                        .....
Document Name:   Test Document ..........     ...................

Print from Page:   001 Print thru Page:   002 Starting as Page No.: 0002
First Header Page: 002 First Footer Page: 002 Footer Begins on Line:  54

Page Length:        66 No. of Originals:   01 Character Set No.: 2 8
Printer No.:        20 Left Margin:        000 ...

Please select one from each column:

DEVICE    PITCH  FORMAT          FORMS          STYLE     SUMMARY  DELETE

.         ■ 10   ■ Unjustified   ■ Continuous   ■ Final   ■ Print  ■ No
.         . 12   . Justified     . Standard     . Draft   . Omit   . Yes
.         . PS   . With Notes    . Form 1
.         . 15                   . Form 2       LINES PER INCH ■ 6  .8
```

Figure 5-3.   WP Print Document Menu

Consider the following points when you fill in the fields:

Page Length — Enter the value that corresponds to the paper size you are using (refer to the tables in Appendix C).

Printer No. — Enter the device number assigned to the LCS15.

Left Margin — Refer to section entitled "Left Margin" earlier in this chapter for information on how WP calculates the width of the left margin.

Character Set No. — If you enter character set numbers for both typewriter and typographic fonts, WP defaults to 6 lines per inch for text in the typewriter font regardless of the selection you make in the LINES PER INCH field.

DEVICE — The number you enter in the Printer No. field determines the printer type. As a result, the device selection you make has no effect.

PITCH — The character set (font) you use determines the size of the font. As a result, the pitch selection you make has no effect.

FORMS for LCS15 — The LCS15 printer reacts to the Forms options as follows:

Continuous — The LCS15 uses the upper paper tray until it is empty and then automatically switches to the lower paper tray. If the Paper Change option in WP Plus Peripheral utilities is set to Manual, the upper and lower paper trays must be the same size when you select Continuous as the Forms option.

Standard — If you print the document summary, the LCS15 uses the upper paper tray to print it and then uses the lower tray to print the first page of the document. It then uses the upper tray to print the rest of the document.

If you omit the document summary, the LCS15 uses the lower paper tray to print the first page of the document, and then uses the upper paper tray to print the rest of the document.

When you select Standard as the forms option, the upper and lower paper trays must be the same size.

Form1 — All paper comes from the lower paper tray.

Form2 — All paper comes from the upper paper tray.

Envelope — LCS15 does not support the printing of envelopes. If you select this Forms option, it uses the upper paper tray.

FORMS for LDP8 — The LDP8 printer reacts to the Forms options as follows:

Continuous — The LDP8 uses all pages from the paper tray until it is empty and then needs to be refilled.

Standard — The first page comes from the manual feed (each page inserted individually) and the remaining pages come from the paper tray.

Form1 — All pages come from the manual feed; each page has to be inserted individually.

Form2 — All pages come from the paper tray (same as continuous).

Envelope — Envelopes come from manual feed; each envelope has to be inserted individually.

SUMMARY — WP uses the primary character set of your document to print the document summary. Make sure that the primary character set is a fixed-pitch or mono-spaced font and is small enough so that the summary information can fit on the page when you want the summary printed.

LINES PER INCH — WP uses this setting only for the vertical line spacing of text in a typewriter font. (It uses the two-thirds plus one-third formula to determine the vertical line spacing of typographic fonts.) However, if one of the character set numbers you specify is a typographic font, WP defaults to 6 lines per inch for the vertical line spacing of the typewriter font regardless of the value in the LINES PER INCH field.

Printing an Index

WP uses the primary character set of your document to print an index. Make sure that the primary character set is a fixed-pitch typewriter font or a monospaced typographic font and is small enough so that the index information can fit on the page.

Dual-Column Printing

If you select dual-column printing and the document has a header and/or footer, the LCS15 and LDP8 print the header and/or footer for each column.

Printing IWP Documents and PC Metafiles

The PostScript and LaserJet printers have the following capabilities for printing IWP documents and PC metafiles:

PostScript — If you have the File Server Communications option on your system, you can print Integrated Word Processing (IWP) documents and Professional Computer (PC) metafiles on a PostScript printer that is connected to a VS. The printed output is similar to that of the LIS-12 or LIS-24.

LaserJet — If you have the File Server Communications option on your system, you can print Integrated Word Processing (IWP) documents on a LaserJet printer that is connected to a VS.

Refer to the *Wang Professional Computer PIC™ File Server User's Guide* for information on using the File Server Communications options.

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Section III

VS DP Peripherals Software

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Chapter 1
INTRODUCTION TO VS DP PERIPHERALS SOFTWARE

OVERVIEW

Section III contains information that you need to run peripherals software, included in the VS Device Support Package, in order to print Data Processing files on the VS.

The chapters in this section contain the following material:

Chapter 1 — Provides an overview of the contents of this section and an outline of the steps you follow in order to connect the printers to your system.

Chapter 2 — Lists the features that are supported on each printer and the types of print files that can be printed using Peripherals software.

Chapter 3 — Presents the special considerations and restrictions that you should be aware of when using the printers and utilities.

Chapter 4 — Describes the procedures you need to follow in order to run the FONTCNTL and FORMCNTL utilities.

Chapter 5 — Describes how PostScript and LaserJet Plus printers function with DP printers. This chapter also describes the procedure to run the PSPRINT utility.

GETTING STARTED

The peripheral software controls your printers. Before you can print from a printer that is connected to your system, you have to make sure that the peripheral software is installed and configured properly.

This section presents the steps you perform to get the printers running, and it also refers you to the chapters in this section as well as in other appropriate documents that contain the required procedures.

The following list presents the steps you perform to get the printers up and running.

- Install the VS Device Support Software Package
- Configure the printers
- Assign Printer Classes

Additionally, you may want to perform the following:

- Install additional fonts (through FINSTALL or FONTCNTL)
- Define printer form definitions (through FORMCNTL Utility)

Installing the VS Device Support Package

The procedure for installing the VS Device Support package is found in the CSRN that accompanied your software. Part of the install procedure is to run the FONTCNTL utility. Refer to Chapter 4 in this section for the steps to run this utility.

Configuring Printers

You must configure the printers to your VS system. This procedure has to be done if you are either installing printers for the first time or adding a new printer. You do this by running the GENEDIT program in the RUN Program and Procedure selection on the Command Processor. Refer to the *VS System Administrator's Reference Guide* for more information.

Assigning Print Classes

Each DP printer must have at least one Print Class assigned to it. This procedure is done through the operator's console (PF 7 change scheduling). Refer to the *VS System Administrator's Reference Guide* for the procedure.

Installing Additional Fonts

Additional fonts are available and are supplied on diskettes. They are installed on the system through FINSTALL (if you have WP) or FONTCNTL (use the OISFILE field on the Install Font Input screen). You must run the FONTCNTL utility to install fonts to a specific printer. Refer to the CSRN that accompanied the software for the procedure to install additional fonts.

Defining Printer Form Definitions

Defining Printer Form Definitions, which is done through the FORMCNTL utility, sets a number of print parameters including the dimensions of the paper used for printing. The printer will use default values when no form is defined for a job printed with a given form number. Refer to Chapter 4 in this section for the steps to use this utility.

Chapter 2
VS DP PERIPHERALS SOFTWARE FEATURES

Chapter 2 lists the types of files that are supported by the VS DP Peripherals software and the printing features that are available.

FILES SUPPORTED BY VS DP PRINTING SOFTWARE

The following files can be printed using VS DP Printing software:

- DP Text print files
- WIIS Image print files
- VSGF Graphic print files
- PSPRINT print files
- Redirected print files (refer to the *PC 200/300 Redirection Operations Guide* for the printers that can be used and the types of files they support)

Note: WIIS Image files and VSGF Graphic files can only be printed on certain devices. Refer to the tables in Section I, Chapter 1 of this book for the list of printers and files supported.

DP PRINTING FEATURES

The following printing features are supported on certain VS DP devices:

- Double Width Characters (on most matrix printers)
- On-line Printing (non-font loading printers only)

Chapter 3
SPECIAL CONDITIONS AND RESTRICTIONS FOR DP PERIPHERALS SOFTWARE

INTRODUCTION

This chapter describes the conditions and restrictions of VS DP Peripherals. The conditions and restrictions are listed in alphabetic order, for each printer, according to their identifying title. Probe numbers are included wherever applicable. Probe numbers are assigned to comments concerning the operation of the software; these numbers provide a basis for tracking the comments.

ALL PRINTERS

Restrictions

"Assistance Required" Message — If a printer is stopped during the printing of a line (by deselecting, running out of ribbon, or otherwise causing an "Assistance Required" message to appear on the operator console), and a) the operator answers the message by positioning the cursor next to the message and pressing ENTER, b) the user reselects the printer, and c) the operator chooses to "Continue Printing" (by pressing PF1), one of the following actions may occur:

- The entire line is reprinted, *overstriking the portion already printed* before the printer stopped,

- The entire line is printed on a new line, *leaving the existing partial line above it,* or

- The *entire line is lost* and not printed.

Out of Paper Action — If the selected or default sheet feeder/bin is empty, the printer issues an "Assistance Required" operator message and waits for the feeder bin to be refilled. There is one exception. When a bin that has been selected as the highest numbered bin (PCB 1 selection bit = 0 and PCB selection bits = 7) is empty, the printer attempts to use the bin with the next lower number.

DW/OS-55 DAISY PRINTER

Restrictions

Installation of Ribbon or Daisy Wheel — The printer cannot detect that a ribbon or daisy wheel is not installed.

Printer Deselect — The printer hangs if deselected when the last character of a line is printing. The printer cannot be reselected and must be turned off and then on to recover from this condition.

Vertical Pitch — It is not possible to select a form of 4 lines per inch on this printer using the VS Forms Control (FORMCNTL) utility, as only 3, 6, and 8 lines per inch are supported by FORMCNTL.

DW/OS-60 DAISY PRINTER

Restrictions

Feeder Select Lamp — If the Feeder Select lamp is not correctly set (OFF with a FT-40 forms tractor or ON when the DSF-60 sheet feeder is attached), the printer may act unpredictably (not feed another sheet of paper).

Out of Paper Detection — If the printer is selected for printing with no sheet feeder or forms tractor plugged into the socket in back of the printer, the printer cannot detect that the paper has run out. The printer prints on the platen if the paper runs out.

Power On Sequence — If a job is queued before the printer has completed its power on sequence (alarm sounds), the Change Form message that precedes the first job of the day may not be posted. The VS system will not IPL the printer if a file is queued to the printer prior to turning on the printer. If the alarm does not sound after the initial power on sequence, the VS system has not loaded the VS DP microcode file, @MCDW60, to the printer.

Print Wheel — This printer prints properly only when the printer is equipped with a "Wang 06" style print wheel. This is particularly important in a VS/IIS environment where the printer is used for WP applications.

5574-1 BAND PRINTER

Restrictions

Deselect Timer — The printer deselect timer can be patched as required to change the amount of time the printer waits between the last character printed and the time the printer deselects and reselects. The timeout can be set to zero to inhibit this feature. To find the timeout value, locate the string "TIMER" in the microcode file. The two bytes following this string (currently located at 1C2A hex) contain the timeout value. The first byte is the least significant byte and the second is the most significant byte. The microcode is shipped with the timer set to 4000 hex.

Form Length — The 5574-1 printer hardware limits form length to 126 lines rather than the 144 lines per page common to most VS printers.

Modify Band Types — This printer can be modified to support all the band types available from Wang (e.g., German 64 or 96 characters). To select a country code, run the FONTLOAD utility, which modifies the predefined byte labeled CNTRYDEF (located at memory location 1C23 hex). This byte selects the translation table to be used while printing. The proper band and PROM set must be installed to print other languages or character set sizes. The default country code is the U.S. 64 and 96 character set.

"Paper Out" Condition — The following restrictions apply to the "paper out" condition:

- The printer does not print additional lines at the bottom of the page following a "paper out" condition.

- The printer does sense a "paper out" condition when paper is fed using friction feed.

Vertical Pitch — Printer vertical pitch is selected by using the switch located near the error LEDs on the printer's control panel. A vertical pitch record (created through FORMCNTL) must still be sent to the printer so that the Siblink board can track the paper correctly. It is the operator's responsibility to set the 6/8 lpi switch on the printer when the "change forms" message appears on the operator console. Changing vertical pitch (lines per inch) should be done only at top of form.

ALL FONT-LOADING PRINTERS

Restrictions

Install Font — You must install at least one font (through FONTCNTL) before a laser printer will print.

IPL Printers — Font loading printers must be IPLed with no print jobs released to the printer to assure that the entire IPL sequence is completed. If a job is queued before the printer has completed its power on sequence, the "Change Form..." message that precedes the first job may not be posted. The VS system will not IPL the printer if a file is queued to the printer prior to turning on the printer.

On-line Printing — On-line printing is not presently supported for font loading printers due to a restriction of the VS operating system.

Proportional Spaced Fonts — Proportional spaced fonts are not supported in DP — using these fonts will cause unpredictable results.

5577 HIGH-DENSITY MATRIX PRINTER

Restrictions

Deselecting the Printer — The following restrictions apply to Deselecting the printer:

- Deselecting the printer (or the occurrence of a fault) while printing graphics (the interval between the first graphic data item and the next non-graphic data item whether printing or not) may cause an unrecoverable failure which requires that the printer be re-IPLed.

- Deselecting the printer, acknowledging the "Assistance Required" message, and reselecting the printer may cause the loss of a line of text or loss of 15 raster lines in graphics mode.

- Deselecting/selecting the printer while the twin sheet feeder is loading paper causes the top of the form to be 8 vertical lines further down the paper than normal. The microcode has no control over the printer once the paper feed or eject operations are started. Do *not deselect* the printer during this function; wait until the operation is complete. The same condition occurs when a WP document is printing.

Front Panel Select Button — Do not push the front panel select button until after the beep sounds, signaling the completion of initialization when the printer is powered up or when switching from WP back into DP mode. Pushing the select button before this causes the printer to enter one of a number of test modes from which there is no recovery except to re-IPL the printer.

Graphics — The following restrictions apply to printing graphics:

- When printing a graphics file using a Twin Sheet Feeder, the printer prints at the top of the page (instead of one inch from the top) if the user deselects the printer, depresses the Top-of-Form button, and reselects the printer.

- When you deselect and reselect the printer while printing a graphics file, a small horizontal misregistration can occur that causes the vertical lines to waver in the printed copy.

Paper Jam — If a paper jam occurs when a sheet feeder is in use, and the paper in the platen is removed, you must press the Top-of-Form button before reselecting the printer. This lets the microcode know that there is no paper in the platen and it will feed a new sheet when printing continues.

Print Files Containing Graphics — Print files containing graphics need not end with a Top-of-Form command as long as the next job begins with a Top-of-Form command.

Sheet Feeder — The following restrictions apply when using a sheet feeder:

- When the print head is positioned near the top of the page, the top corner of the page can become folded over when the print head seeks the home position after you deselect and immediately reselect the printer.

- Printing is not supported on the last inch of paper when using a sheet feeder.

5578 COLOR MATRIX PRINTER

Restrictions

Early Job Queue — If a job is queued before the printer has completed its power on sequence, the Change Form message that precedes the first job may not be posted.

Graphics — Attempting to position the print (forward or backward any number of lines/pages), use of the page line-up test, or reloading the form on the operator Control Printer screen when printing files containing graphics will cause the job to hang and require the printer to be powered off before the job may be removed from the print queue.

Post Deselect Printing — After deselecting the printer while printing, the printhead will continue to print for approximately four (4) lines.

Printhead Temperature — When the printhead reaches its maximum temperature (152° C) all printing will stop and a cool down period will occur. The cool down period will last until the printhead reaches a safe operating temperature (148° C). Printing will then resume.

Print Job Overlap — When printing consecutive files with no top of form (TOF) commands, FORCED EJECT should be set to yes (Y). If this is not done, some jobs such as text/graphics and cancelled text/text may overlap.

Sheet Feeder — The following restrictions apply when using a sheet feeder:

- At power up, Bin #1 is used to feed sheet paper until respecified by the PCBs of the print file.

- If a job is sent with paper already out, you must either position paper in the platen to continue with the same job before reselecting the printer, or you must resend the job after IPLing the printer. The same procedure is required when a sheet feeder is used and the feeder select button was not initially set — this restriction applies despite any PCB designations.

Tractor Form Feeder — When only one page of continuous paper remains and a job is sent to the printer with a TOF command, printing may start before the paper out signal is processed.

LM400/700/900 MATRIX PRINTERS

Restrictions

Fonts Per Line — Only one (1) font per line is supported.

Paper Form at 8 Lines per inch — The following restrictions apply to paper form at 8 lines per inch:

- Files ending with post-skip commands may leave a blank line between jobs.

- The first file sent after the "Change Forms..." message has been acknowledged may eject an extra line if a manual TOF is not performed prior to printing (for forms of differing length).

- Draft and Draftmed fonts cannot be used in 8 lines per inch — the printer defaults to 10 pitch Memo font.

Note: Before the "Change of forms..." message has been acknowledged, the paper must be positioned to line #1. The suggested method is to press the Top of Form desired before starting the job with the new form.

PM017 MATRIX PRINTER

The following restrictions are related to the internal buffer of the PM017 printer.

Restrictions

Halt IO — If a halt IO is sent to the PM017 printer through the Change Status option on the operator's console, the printer may continue to print even after the Control Printers menu has been displayed.

Print data may be sent to the printer faster than it can be printed, therefore, when the code controlling the printer thinks the data has been printed, the data is really still waiting to be printed. When all the data in the buffer has been printed however, the line printed on the paper will match the line printed indication on the Control Printers menu.

Overstrike Function — The overstrike function is required for the International Translation Table support. It is assumed that the proper overstrike characters have been placed into the overstrike translation table before the proper International Translation Table is selected.

Power Off — The PM017 printer should not be powered off while printing is taking place. The printer may have data in its buffer waiting to be printed and shutting off the printer will cause the data to be lost.

Printer Deselect — If the PM017 is deselected for any reason (manual deselect, paper out, change ribbon) an Intervention Required IOSW is sent to the VS to inform it that assistance is required for the printer. If the user tabs to the assistance required message and presses ENTER, the line printed indication on the Control Printers menu may not match the actual line printed on the paper. Once the printer is reselected, the data will be printed and the line numbers will match.

TOF — If the printer is deselected while printing a job and the TOF button is pressed, the printer may loose the TOF position since few lines still remain in the buffer to be printed.

LCS15 LASER COMPOSITION PRINTER

Restrictions

Cancelling a Graphics Print File — When cancelling a graphics print file, the *** PRINT CANCELLED by OPERATOR REQUEST *** message may not be printed.

Cancelling Print Files — The following restrictions apply when cancelling print files:

- Print files with redirected PostScript Data may print to completion when cancelled by the operator near the end of the file.

- Cancelling a redirected print file or an image print file while it is printing may cause a PostScript error message to be printed prior to printing the *** PRINT CANCELLED by OPERATOR REQUEST *** message.

- Cancelling a print job may cause the printer front panel to display 64 FLUSHING status while the job is cleared from printer memory.

Developer Drawer or Toner Recovery Cover Open — If the LCS15 printer is IPLed while the developer drawer or toner recovery cover is open, or during any other error condition, any jobs sent to the printer will result in a printer malfunction message at the controlling workstation. It is suggested that the print job be cancelled, the error condition corrected, and the job be resubmitted.

Feed Jam — A feed jam occurs if paper is removed from the lower bin without removing the bin from the printer and a job is sent with the lower bin selected for printing. This is a known restriction of the print engine.

Fonts — Any attempt to print with this printer when no fonts have been installed or when all installed fonts have subsequently been deleted will cause a printer error to be reported to the user.

Graphics — Attempting to position the print (forward or backward any number of lines or pages) or use of the page "line-up test" on the operator "Control Printer" screen when printing a graphics job, an image file, or a redirected print file causes the printer to hang and requires the printer to be powered off before the print job can be taken off the queue.

Image Print Files TOF at the Beginning — Image print files should have a skip to channel 1 (top of form) at the beginning of the print file. When printing multiple copies of files without skip channel 1 at the beginning of the file, the printer scheduling must have FORCED EJECT set to YES.

Image Print Files TOF at the End — Printing multiple copies of files containing a skip to channel 1 (top of form) at the end of the print file with printer scheduling set to EJECT = YES will cause the printer to eject a blank page between each copy of the file.

Jammed Pages — Pages that jam during printing are not reprinted once the paper jam is cleared. It is suggested that the print job be cancelled and resubmitted to cause all pages to print. This is a known restriction of the print engine.

Job Cancellation Message — The job cancellation message "*** PRINT CANCELLED by OPERATOR REQUEST ***" is not printed when outstanding error conditions (such as the printer being out of paper) exist within the printer.

Margins — The LCS15 printer leaves a margin of approximately one quarter inch on each side of the printed page. Images are positioned within this area with their top left corner located at the top left printable area of the page.

Maximum Number of Lines Per Page — The maximum number of lines per page with A4 paper at 4 lines per inch is 45 on the LCS15.

Printing an IMAGE File — Attempting to control the printer and then pressing PF1 to continue when printing an IMAGE file may cause the printer to hang with a 64 FLUSHING message displayed on the front panel. The printer must be powered off to remove the print job from the queue.

Printing Without Overlay Files — Attempting to print when both LCS15 overlay files are not available on the system will result in printer failure. The job may be cancelled from the operator console, but the message BUSY will continue to appear at the printer.

Reloading Forms Definitions — Do not reload forms definitions during printing — it will cause unexpected results. Instead cancel the print job and resubmit with the desired form number.

Underscore Attribute — Underscored text on line 43 on 8 1/2 by 11 inch paper (with form specification of 45 lines per page at 4 lines per inch) will be printed without the underscore.

LDP8 LASER COMPOSITION PRINTER

Conditions

20 Error Message

Meaning

Using more than 16 distinct fonts on a page will cause a '20 ERROR'.

Action

Press the RESET button on the printer panel to get rid of this condition and reduce the number of fonts used in the print job.

21 Error Message

Meaning

If too much data (raster graphics or dense text) has been sent to the printer a '21 error' might occur.

Action

Press the 'CONTINUE/RESET' key to resume printing (with some data loss). If the error persists, the page causing this error can never be printed by the device. There is an option on the printer's front panel that is used to set AUTO-CONTINUE ON/OFF (with the default being OFF). It is recommended that it be kept OFF. If it is set to ON and the above mentioned situation occurs, the printer will continue printing, ignoring the data it could not process.

Restrictions

Best Match Fonts — If a user selects a font/font cartridge which is not installed, the printer will not inform the user but will select the best match available. The priorities for selecting the best match are:

a. Orientation (portrait/landscape)

b. Symbol (character) set

c. Spacing (fixed/proportional)

d. Pitch

e. Point size

f. Style (upright/italic)

g. Stroke weight

h. Typeface

Change Paper Tray Message — If you choose to ignore a change paper tray message by pressing the continue button on the printer panel there may be some data loss.

Expanded print, job separation and alarm sounding — Expanded print, job separation and alarm sounding are not supported.

Forms/Fonts parameters — Using forms/fonts which specify parameters other than 10, 12, and 15 pitch and 3, 4, 6, and 8 lines per inch will produce unpredictable results. For example, printing at 8 lines per inch with a 12 point font will cause data loss.

Graphics — Only HP LaserJet graphics printing is supported. While printing graphics, a blank page might be printed after the job or the page may not be ejected until the form feed button is pressed.

Installed Fonts — Printing when no fonts have been installed or when the font files associated with the installed fonts have subsequently been deleted will cause the printer to use an internal 10 pitch courier font.

Lines Per Page — The printer will print less lines per page as compared to the figures mentioned in the Wang VS serial printer specifications.

Pressing PF6 While Fonts Down Loading — If you try to control the printer by pressing PF6 on the printers menu, at the same time a font is being down loaded, the workstation and printer may hang.

Printer speed — The printer will print at 8 pages per minute at 10 pitch assuming there are only 2500 character per page or approximately 63 lines with 40 characters of Shannon text per page. The printer will print at 6.7 pages per minute when the page has 80 characters per line.

Reloading of Forms — Reloading of forms while in the middle of printing a page may cause only one line to print on the next page.

LIS-12/24 LASER PRINTERS

Restrictions

Cancelling a Print Job — Cancelling a print job in progress may cause the printer to eject a blank page at the end of the job.

Error Condition — An error condition occurs if you attempt to operate the printer with the print engine power off or with the cable from the engine to the controller disconnected. This error is not reported to you.

Fonts — A print error is reported if you attempt to print a file when no fonts have been installed or when all installed fonts have subsequently been deleted.

Graphic Font Installation — Do not specify a graphic stroke font as a form font or PCB-defined font. Graphic fonts must be installed as follows for the LIS-12/24 laser printer:

Input: COURIER in GP1FONT
Recommended Output font file: COURIER in @GP1FONT on IPL volume
Recommended Output xlat file: COURIER in @GP1FON@ on IPL volume
Required font number 999

Input: MARKER in GP1FONT
Recommended Output font file: MARKER in @GP1FONT on IPL volume
Recommended Output xlat file: MARKER in @GP1FON@ on IPL volume
Required font number 998

Graphic Fonts — The program does not check whether the font file specified as a graphic font is, in fact, a graphic font. However, if the input file is one of the above, the program will force the font number to 998 or 999 as specified above.

Graphics — Attempting to position the print (forward or backward any number of lines or pages), reload the form definition, or use the page line-up test on the operator "Control Printer" screen when printing a graphics job or a WIIS Image causes the job to "hang" and requires the printer to be powered off before the print job can be taken off the queue.

Image File Error — When a paper jam or other error occurs while printing an image file, the printer may not be able to recover the page in progress and reprint it. When this occurs a substitute page with a warning message (advising you to resubmit the job or page for printing) is printed after you clear the jam.

Image Print Files TOF at the Beginning — Image print files should have a skip to channel 1 (top of form) at the beginning of the print file. When printing multiple copies of files without skip channel 1 at the beginning of the file, the printer scheduling must have FORCED EJECT set to YES.

Job Cancellation Message — The job cancellation message "*** PRINT CANCELLED by OPERATOR REQUEST ***" is not printed unless at least one page of the job being cancelled has been placed in the output bin by the printer.

LPS8 LASER PRINTER

Restrictions

"Assistance Required" Message — On operating systems before 7.10, if a print job encounters an error or fault condition very close to the end of the job, the "Assistance Required" message that usually appears at the Operator's console may not be posted. You will not be informed of the error until the next job arrives at the printer.

Cancel Job — When an "Assistance Required" message appears at the VS operator's console and PF5 (Stop Printing) is pressed, one of the following actions may occur:

- If the printer is deselected when PF5 is hit, the printer clears any remaining buffered text data. No further text from the cancelled job is printed and a blank page is ejected before the next print job to maintain proper vertical form registration.

- If the printer's error condition has been cleared and the printer is reselected when PF5 is hit, the remaining buffered pages followed by the "Print Cancelled" message are printed.

- If the printer's error condition has been cleared, the printer is reselected when PF5 is hit, and the printer is again deselected while finishing the job, the printer immediately clears any remaining buffered text. No further text from the cancelled job is printed and a blank page is ejected before the next print job begins to maintain proper vertical form registration.

- If the printer is controlled from PF6 (Change Status) from the Control Printers screen (the job in progress was interrupted and the printer has no errors), and then PF5 (Stop Printing) is pressed, the printer continues as in Case 2 or Case 3 above.

Default Font — It is highly recommended that 10 pitch Courier be selected as the default font in FONTCNTL. This corresponds to the internal font supplied with the LPS-8 printer. If a cartridge font is specified as the default font, it must be installed in the printer at all times.

Empty Paper Tray — This special condition applies if the printer has the R02K (WLI# 379-5002, 5003) version of firmware PROMs (a later version of the firmware PROMs will correct this condition): If the printer is powered on while there is no paper in the tray and a print job is queued, the printer hangs when paper is loaded. To clear this condition, turn the printer off and then on after you load paper.

Optimize Print Speed — To optimize print speed, the LPS-8 can buffer up to 14 pages of print data before printing it. When error conditions or a deselect occur, the "Operator Assistance Required" message appears at the VS Operator's console. When you service the message, the number of lines printed (records processed) shown at the top of the screen may be more than the actual number printed on paper. This is because the number displayed represents the number of lines the printer has buffered. If you press PF5 (Stop Printing), the pages remaining in the buffer may print before printing stops.

Printer Control — If the printer is printing near the end of the job, you will not be able to control the printer using the PF6 key (Change Status) from the Control Printers screen.

LPS-12 LASER PRINTER

Restriction

VS DP Printing — This LPS-12 printer is not supported for VS DP printing. The microcode file supplied in this package, however, allows the installation of this printer for WP applications.

PSPRINT UTILITY

Restriction

When using the DATA EXCHANGE utility to send Wang PC files to a VS, use the following parameters:

Input - PC Text File
Output - VS Consecutive File
Blank Lines - Yes
Character Set Conversion - No
Record Type - Variable
Compressed Records - Yes
Record Size - 999
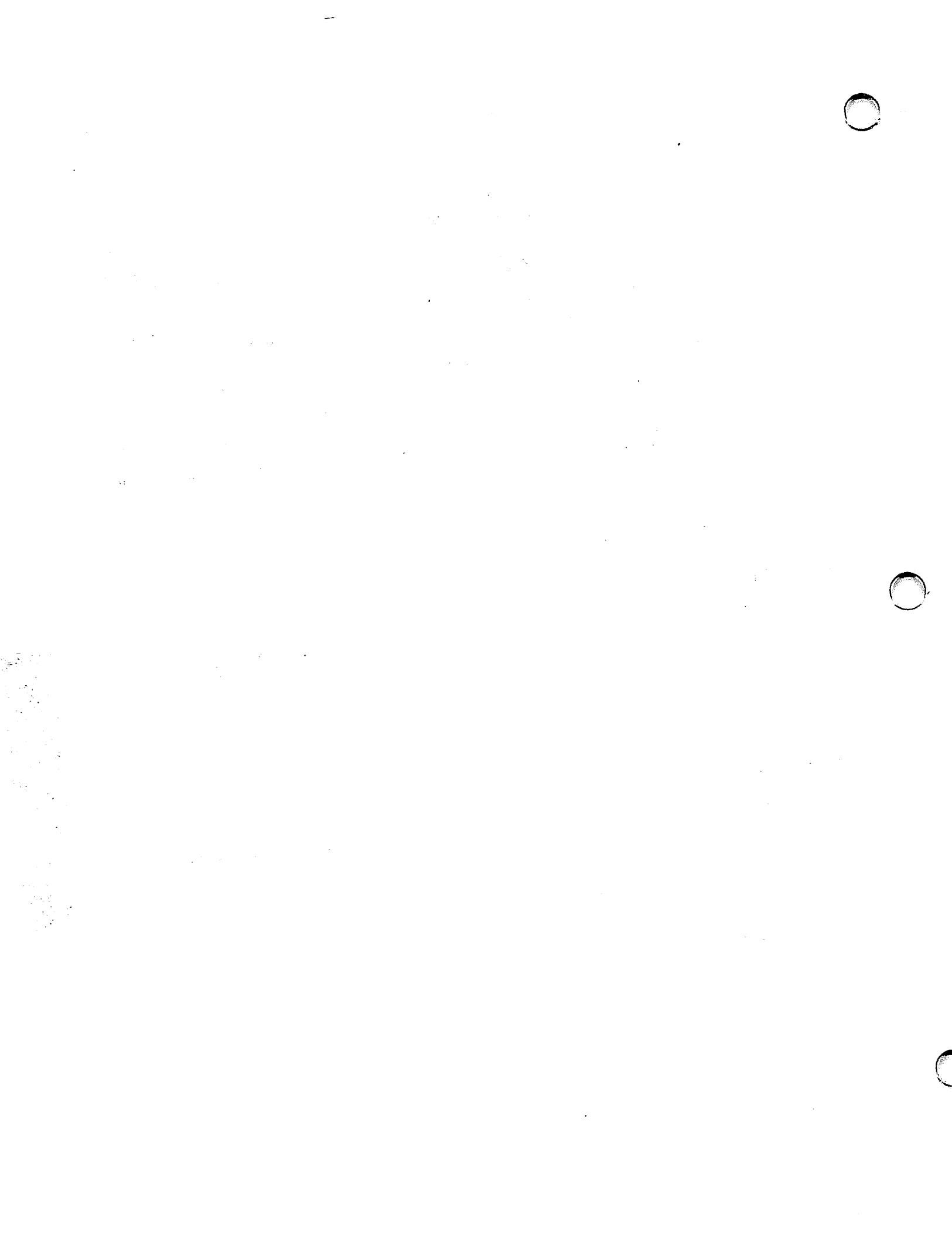
Chapter 4
VS DP PERIPHERAL UTILITIES

INTRODUCTION

Chapter 4 describes the use of the Font Control and Forms Control VS Data Processing utilities.

The Font Control utility, FONTCNTL, allows you to manage printer fonts for text files and graphics files printing on font loadable printers. With FONTCNTL, you can install, delete, modify, make inquiries, and assign numbers to Wang-supplied fonts.

The Forms Control utility, FORMCNTL, allows you to create and maintain a file of form definitions for the VS serial printers. A form definition controls the printing format and selects the font or character set to be used for printing, if applicable.

THE FONTCNTL UTILITY

Fonts and Font Files

A font is a complete set of type of one size and one face, provided in machine-readable form. Font files are loaded onto the system by the system administrator. Font files consist of the following parts:

The Header Section — Contains information about the font

The Translation Table — Passes translated character information to the printer

The Font Data — Contains the actual font characters that are printed

Font characters are represented by hexadecimal values in the translation tables. When you install a font onto the system, there is usually a one-to-one correspondence between the hexadecimal value for a character and the actual character that is printed.

Note: Any user can access and print information about the fonts that are available on the system. However, for the protection of system fonts and those using them, only those with security administrator privileges, or users who have a write privilege equal to the protection class of the catalog file (@FONTCAT), can install, modify, or delete fonts.

FONTCNTL Utility Functions

FONTCNTL utility lets you perform the following functions:

- Review the fonts available for a printer
- Install a font for a specific printer
- Delete a font for a specific printer
- Modify a font for a specific printer
- Print a copy of a list of fonts for a specific printer

You can control FONTCNTL processing through the VS Procedure language. Refer to the section entitled "A Sample FONTCNTL Procedure" in this chapter for more information.

FONTCNTL Screen Flow

When you run the FONTCNTL utility, you can scroll backward and forward through the FONTCNTL screens.

To move forward, specify values in the fields on the screen (where applicable) and press the ENTER (Continue) key. If a PF key option menu appears, press the PF key that corresponds to the action you want to perform.

To view previously displayed screens, press PF1 (Return) to return to the previous screen (or the beginning of a FONTCNTL function).

When the displayed data cannot fit onto a single screen, the data is listed on subsequent screens that are treated as extensions of the first screen. This group of screens is called an "extended screen". To scroll through a series of screens in an extended screen, press PF4 (Previous) to view previous data, or PF5 (Next) to view subsequent data. When you press the ENTER key, the entire series of screens is processed.

Accessing the FONTCNTL Utility

To access the FONTCNTL utility, perform the following steps:

Procedure

1. Press PF1 (RUN Program or Procedure) from the Command Processor menu.

2. Enter FONTCNTL in the Program field (enter the library and volume if FONTCNTL does not reside in @SYSTEM@ on the system volume) and press the ENTER key. Then FONTCNTL processing begins, a status screen appears while the system initializes the utility. When the utility is initialized, the FONTCNTL main menu (see Figure 4-1) appears.

Press PF-key That Corresponds to the Desired Function

(1)   Review Fonts

(2)   Install Font

(3)   Delete Font

(4)   Change Font

(15)   Print Catalog

(16)   Exit

Figure 4-1.   FONTCNTL Main Menu

Note: If you do not have security administrator's privileges or a write privilege equal to the protection class that is assigned to the font catalog, PF keys 2, 3, and 4 do not appear on your workstation screen.

Accessing FONTCNTL Functions

Procedure

1. To access any of the functions on the FONTCNTL main menu you use the PF keys located on the top row of the keyboard. The following list describes the PF keys.

PF Key	Function	Description
1	Review Fonts	The Review Fonts function allows you to review the fonts that are available on the system.
2	Install Font	The Install Font function allows you to place another font file into the font catalog. You must have a write privilege that is equal to the protection class of the catalog file (@FONTCAT) to use this function.
3	Delete Font	The Delete Font function allows you to remove a font file from the font catalog. You must have a write privilege that is equal to the protection class of the catalog file (@FONTCAT) to use this function.
4	Change Font	The Change Font function allows you to modify a font file. You must have a write privilege that is equal to the protection class of the catalog file (@FONTCAT) to use this function.

PF Key	Function	Description
15	Print Catalog	The Print Catalog function allows you to obtain a listing of the font catalog.
16	Exit	The Exit function terminates the current session of FONTCNTL processing.

2. Press the appropriate PF key for the function you want on the FONTCNTL main menu. When you select any of the functions on the FONTCNTL main menu, the FONTCNTL Device Selection screen (see Figure 4-2) appears.

```
FONTCNTL                    Device Selection                      DEVSCRN
(c) Copr. Wang
_____


        Position Cursor next to the Device Type and Press (ENTER)


                     Device Type     Description

                     _ LM900       Shuttle Matrix Ptr
                     _ 5577        Hi-Dens Matrix Ptr
                     _ LIS12/24    12/24 ppm Laser Ptr
                     _ LPS8        8 ppm Laser System


                                   or
                     Enter a Device Type name

                          DEVICE = _____
_____

( 1) Return
          ( 5) Next                                     (16) Main Screen
```

Figure 4-2. FONTCNTL Device Selection Screen

The FONTCNTL Device Selection screen allows you to select the printer device on which you want to perform the function that you selected.

3. Using the TAB key select the device in one of the two following ways. Either position the cursor next to the device that you want and press the ENTER key or enter the device type in the Device field and press the ENTER key. The Device field takes precedence over the cursor position if you use both selection options.

Note: Only four printers are displayed on this screen. Press PF5 to display additional printer types.

Review Fonts

The Review Fonts function displays the fonts for a particular printer, the file name of a particular font, and the file name of the corresponding translation table.

To review fonts, perform the following steps:

Procedure

1. Press PF1 from the FONTCNTL main menu. The FONTCNTL Device Selection screen (see Figure 4-2) appears.

2. Select the device and press the ENTER key. The FONTCNTL Review Fonts screen (see Figure 4-3) appears.

```
FONTCNTL                      Review Fonts                      FONTREVU
(c) Copr. Wang


                          DEVICE =LIS12/24


      Font #  Status               Description

      001               10 Pitch Courier Portrait
      002               10 Pitch Courier Landscape
      003      DEF      12 Courier portrait
      004               12 Courier landscape
      005               15 Letter Gothic portrait
      006               15 Letter Gothic landscape
      011               10 Pitch Courier Portrait — ASCII
      013               12 Courier portrait — ASCII
      112               12 Times Portrait
      200               10 Pitch Courier Portrait


( 1) Select New Device
( 2) File Information    ( 5) Next                      (16) Main Screen
```

Figure 4-3. FONTCNTL Review Fonts Screen

The FONTCNTL Review Fonts screen lists the available fonts (currently in the System Font Catalog) for the specific device that you specified.

The following list describes the fields on the FONTCNTL Review Fonts screen.

Field	Description
DEVICE	The Device field displays the device specified for review.
FONT #	The Font # (Font Number) field displays the number that is assigned to a particular font.
STATUS	The Status field is blank for all fonts except one. The one font that contains "DEF" in this field is the default font for the device that you selected for viewing.
DESCRIP-TION	The Description field displays a brief summary of the description (i.e., pitch, point, character set) of a particular font.

3. Press PF2 (File Information) to view file information about the fonts listed on the FONTCNTL Review Fonts screen. The FONTCNTL File Information screen (see Figure 4-4) appears showing those fonts that were displayed on the FONTCNTL Review Fonts screen.

```
FONTCNTL                          Review Fonts                          FONTRVWX
(c) Copr. Wang
_____

                              DEVICE  = LIS12/24

  F#   FSystem   FFile      FLib      FVol      XSystem   XTable    XLib      XVol

  001            COURIER    a31310PN  SYSTEM              COURIER   a31310Pa  SYSTEM
  002            COURIER    a31310LN  SYSTEM              COURIER   a31310La  SYSTEM
  003            COURIER    a31312PN  SYSTEM              COURIER   a31312Pa  SYSTEM
  004            COURIER    a31312LN  SYSTEM              COURIER   a31312La  SYSTEM
  005            GOTHIC     a31315PN  SYSTEM              GOTHIC    a31315Pa  SYSTEM
  006            LTRGOTHC   a31315LN  SYSTEM              LTRGOTHC  a31315La  SYSTEM
  011            COURIER    a31310PN  SYSTEM              COURIERA  a31310Pa  SYSTEM
  013            COURIER    a31312PN  SYSTEM              COURIERA  a31312Pa  SYSTEM
  112            TIMES      a31312PN  SYSTEM              TIMES     a31312Pa  SYSTEM
  200            COURIER    a31310PN  SYSTEM              COURIER   a31310Pa  SYSTEM

_____

( 1) Select New Device
( 2) Description Menu    ( 5) Next                             (16) Main Screen
```

Figure 4-4. FONTCNTL File Information Screen

The FONTCNTL File Information screen displays more information about each font that is assigned to the device specified for review. The fields on the FONTCNTL File Information screen are as follows:

Field	Description
DEVICE	The Device field displays the device specified for review.
F#	The F# (Font Number) field displays the number that is assigned to a particular font.
FSystem	The FSystem (Font System) field displays the name of the system on which a particular font file resides. If this field is blank, then the system on which the font file resides is the current system.
FFile	The FFile (Font File) field displays the name of the file in which a defined font resides.
FLib	The FLib (Font Library) field displays the name of the library in which the corresponding font file resides.
FVol	The FVol (Font Volume) field displays the name of the volume on which the corresponding font library resides.

Field	Description
XSystem	The XSystem (translation system) field displays the name of the system on which a particular font translation file resides. If this field is blank, then the font translation file resides on the current system.
XTable ·	The XTable (translation table) field displays the name of the translation table file in which a specific font is defined.
XLib	The XLib (translation library) field displays the name of the library in which the corresponding translation library resides.
XVol	The XVol is the name of the volume where XLib resides.

Remarks

Extended Screens — If all of the fonts for the device that you specified for review cannot be displayed on one screen, you can view the subsequent screens of the extended screen by pressing PF5 (Next). You can view the previous screens of the extended screen by pressing PF4 (Previous). To review another device, press PF1. To return to the review fonts list, press PF2. If you want to return to the FONTCNTL main menu, press PF16.

Install Fonts

The Install a Font function lets you install a font into the font catalog of any volume and assign numbers to specific fonts.

The operating system considers a file containing font information to be like any other file. When you install a file containing font information, the FONTCNTL utility creates a pointer to the file in the font catalog. This file is considered by the operating system as a font file.

Perform the steps in the following procedure to install a font.

Procedure

1. Press PF2 (Install Font) from the FONTCNTL main menu. The FONTCNTL Device Selection screen (see Figure 4-2) appears.

2. Select the device and press the ENTER key. Press PF5 to see additional types of printers to select. The FONTCNTL Install Font Input Definition screen (see Figure 4-5) appears.

```
                        Specify the VS file:
      FILE    = _____  LIBRARY = _____  VOLUME = _____

                        OR the OIS File:
      OIS FILE = _____

                   AND Supply the Following Information:

          FONTNUM = 1__ (1- 999)      FORMAT   = VS_ (VS/OIS)

          DEFAULT = NO_ (YES/NO)      GRAPHICS = NO_ (YES/NO)

          NATCODE = US_               DEVICE   = LIS12/24
```

```
(ENTER) Continue   ( 2) Select National Code
( 1) Return                                        (16) Main Screen
```

Figure 4-5. FONTCNTL Install Font Input Definition Screen

The following list describes the fields on the FONTCNTL Install Font Input Definition screen.

Field	Description
FILE	The filename of the VS Font file that you want installed.
LIBRARY	The library name where the font file is located.
VOLUME	The volume name where the library is located.

Note: If you are installing fonts on an OIS, leave these fields blank.

Field	Description
OISFILE	The OIS diskette font file (located on the diskette label) that you want to install on the system. If the file is coming from a VS file, leave this field blank.
FONTNUM	A unique number (1 - 999) that identifies the installed font.
FORMAT	The format (VS or OIS) of the input font file.
DEFAULT	To determine (enter yes or no) whether you want the font that you are installing to be the default font for the type of printer device that you specified.
GRAPHICS	To determine (enter yes or no) whether the font file specified is a special VSGF graphic stroke font (special format).
NATCODE	The national code of the country or language to which the font pertains. This field contains the default value which was determined at system generation. If you press PF2 or leave the field blank, the FONTCNTL Language Selection screen appears. Refer to the Remarks sections at the end of this procedure for steps to change this field.
DEVICE	The device name (5577, for example) for the type of printer for which the font has been created.

Note: A graphics font cannot be a default font.

3. Specify the font file that you want installed.

   - If VS, enter the FILE, LIBRARY, and SYSTEM names.

   - If OIS, enter the OIS diskette file name.

4. Press the TAB key to move the cursor to the remaining fields.

5. Enter the appropriate information in the remaining fields. Be sure to enter a Font number and press the ENTER key. The FONTCNTL Install Font Output Definition screen (see Figure 4-6) appears.

```
FONTCNTL                    Install Font Output                     FONTCOPY
(c) Copr. Wang
_____

                        Source File Information:

    INFILE  = TIMES___    DEVICE  = LIS12/24      FONTNUM  = 10
    LIBRARY = a31312PN    DEFAULT = NO            GRAPHICS = NO
    VOLUME  = SYSTEM      NATCODE = US            Unites States

  Review (Modify) Information for the Destination Files and Select PF-KEY:

        FONTFILE = TIMES___       XTABLE   = TIMES___

        FONTLIB  = a31312PN       XLIB     = a31312Pa

        SYSVOL   = SYSTEM


    DESCRIPT = 12 Times Portrait_____
_____

(ENTER) Continue
( 1) Respecify Input

                                                    (16) Main Screen
```

Figure 4-6.   FONTCNTL Install Font Output Definition Screen

The FONTCNTL Install Font Output Definition screen displays the input fields on the top half of the screen. These fields are unmodifiable. The bottom half of the screen displays the Destination Files fields with the default values which are modifiable.

It is recommended that font files be placed on the system volume. Also, the default values for the output file are the same for both data processing (DP) as they are for word processing (WP). This ensures that only one copy of the font file is on the system.

The following list describes these fields:

Field	Description
FONTFILE	The name of the file in which you want the font to reside. The default value is obtained from a data record in the font file that you specified.
XTABLE	The name of the file in which you want the font translation table to reside.
FONTLIB	The name of the library in which you want the font file to reside. The default value is obtained from a data record in the font file that you specified.
XLIB	The name of the library in which you want the font translation table to reside.
SYSVOL	The name of the volume on which you want the font file and font translation table to reside. The default value is the system volume.
DESCRIPT	The default description of the font or optionally specifies a new font description.

Note: The Font file and its corresponding Translation table file must *reside on the same volume.*

6. To install the font with the default values, press the ENTER key. To modify the fields, use the TAB key to move the cursor to the field and enter the new value and press the ENTER KEY. The font is installed and the file is created, a confirmation screen appears showing the newly created font file and its associated attributes.

Remarks

National Language Selection Function — The National Language Selection function allows you to automatically alter the translation table for the country or language that you select.

If you enter an invalid code in the NATCODE field, or leave this field blank on the FONTCNTL Install Font Input Definition screen, when you press RETURN, the FONTCNTL Language Selection screen (see Figure 4-7) appears and you must specify a country or language.

However, while you are in the FONTCNTL Install Font Input Definition screen, you can press PF2 to access the FONTCNTL Language Selection screen and return by pressing PF1 (Return). PF1 allows you to exit the FONTCNTL Language Selection screen without selecting a new country or language.

Position Cursor next to the Country and Press (ENTER)

_ Australia	_ Finland	_ Latin America	_ Sweden
_ Austria	_ France	_ Netherlands	_ Swiss French
_ Canada	_ Germany	_ Norway	_ Swiss German
_ Cyprus	_ Greece	_ Portugal	_ United Kingdom
_ Denmark	_ Iceland	_ South Africa	_ United States
	_ Italy	_ Spain	

or

Position Cursor next to the Language and Press (ENTER)

_ Ascii	_ Flemish	_ Thai
_ Arabic	_ Hebrew	_ Turkish
_ Cyrillic	_ Katakana	_ Wiscii
	_ Serbo Croatian	

---

(1) Return

Figure 4-7. FONTCNTL Language Selection Screen

To specify a country or language for which the font you are installing applies, position the cursor at the space preceding the name of the country or language that you want and press the ENTER key. The FONTCNTL Install Font Input Definition screen reappears with the NATCODE field filled in the specified country or language code.

Caution: *Although the National Language Selection function creates a translation table for the country or language that you selected, you must ensure that the font file contains the characters required for the printer to print the selected language characters.*

If your printer does not have the Wang International Standard Code for Information Interchange (WISCII) character set that supports the country or language that you selected in the font file, unpredictable results may occur when a printout is made.

Refer to Appendix B for information about the WISCII-1 character set (U.S. and Western Europe) and the other available supported WISCII character sets.

Delete Font

The Delete Font function lets you delete a font entry from the font catalog (this function does not delete the font file). Deleting a font only disassociates it from a printer (removes the pointer to the font file) and does not destroy the font file itself.

Procedure

1. Press PF3 from the FONTCNTL main menu. The FONTCNTL Device Selection screen (see Figure 4-2) appears.

2. Select the device and press the ENTER key. The FONTCNTL Delete Font Definition screen appears.

3. Specify the number of the font that you want removed and press the PF8 key.

When the deletion is complete, a confirmation message appears.

Change Font

The Change Font function lets you change font numbers, change the default font, and modify existing fonts using the translation table.

To perform the Change Font functions, you need to access the FONTCNTL Font menu. Perform the following steps to access the FONTCNTL Change Font menu.

Procedure

1. Press PF4 from the FONTCNTL main menu. The FONTCNTL Device Selection screen (Figure 4-2) appears.

2. Select the device and press the ENTER key. The FONTCNTL Change Font menu appears, as shown in Figure 4-8.

```
FONTCNTL                          Change Font                       FONTMOD
(c) Copr. Wang
_____


           Press the PF-Key That Corresponds to the Desired Function:


                         ( 1) Return

                         ( 2) Change Font Number

                         ( 3) Change Default Font

                         ( 4) Modify Font Translation Table

                         (16) Main Screen
```

Figure 4-8. FONTCNTL Change Font Menu

This menu presents the options to perform the Change Font functions. The procedures for using these options are described in the following sections.

Notes: *You can return to the FONTCNTL main menu by pressing PF1 or you can exit from the FONTCNTL utility by pressing PF16.*

Modifications to fonts do not become active until the printer is re-IPLed. To re-IPL the printer, you can do one of the following: turn the printer off and on; release the printer and then acquire it using Operator mode (PF11 on the Command Processor screen). For more information, refer to the VS Operator's Reference.

Change Font Number (PF2)

The Change Font Number function changes the font number that is associated with a font file.

Procedure

1. Press PF2 from the FONTCNTL Change Font menu, the FONTCNTL Change Font Number screen appears.

2. Specify the old font number (1 - 999) that you want changed in the Old Font field.

3. Specify the new font number (1 - 999) to which you want the font changed.

4. Specify the printer device associated with the font number that you want changed in the Device field.

5. Press the ENTER key to change the font number. If the font is successfully changed, a completion message appears.

Change Default Font (PF3)

The Change Default Font function changes the default font from one font file to another.

Procedure

1. Press PF3 from the FONTCNTL Change Font menu, the FONTCNTL Change Default Font screen appears.

2. Specify the number of the font (any existing font number), that you want to become the default font, in the DFLTFONT field.

3. Specify the printer device, for which you want the default font changed, in the Device field.

4. Press PF7 to change the Default font. If the default font is successfully changed, a completion message appears.

Note: *The default font number must be an existing font number. If you specify a non-existent font number, an error message appears.*

Modify Font Translation Table (PF4)

The translation table allows you to translate a character into another character for printing; for example, you can change the translation table so that the uppercase character C is printed in place of the lowercase character c. To print uppercase C instead of lowercase c, locate the entry in the translation table for the lowercase c and change its hexadecimal value from 63 (c) to 43 (C).

You can translate any character into any other character for printing through the translation table (as long as your printer has the proper WISCII character set in the font file). The printer microcode references the font data to interpret and print the characters that you want printed in their place. The font data is unmodifiable.

Note: Because certain characters cannot be represented on a CRT display, only the first 128 characters of a font can be translated. If you want a character to be printed (even though it cannot be displayed) you must know the hexadecimal value for that character and place it in the translation table. Appendix B contains the WISCII-1 character set (United States and Western Europe) with the corresponding hexadecimal values. For character sets other than WISCII-1, contact your Wang customer service representative.

Perform the following steps to modify the translation table:

Procedure

1. Press PF4 from the FONTCNTL Change Font menu, the FONTCNTL Modify Font Translation Table screen appears (see Figure 4-9). The Device field displays the printer device that you specified on the FONTCNTL Device Selection screen.

```
FONTCNTL              Modify Translation Table              FONTPTCH
(c) Copr. Wang
_____



                       DEVICE  = LIS12/24


                   Specify the Font Number
                   FONTNUM  = 10_




_____

(ENTER) Continue
( 1) Return
                                              (16) Main Screen
```

Figure 4-9.   The FONTCNTL Modify Font Translation Screen

2. Enter the font number of the font that you want to modify in the FONTNUM field and press ENTER. The FONTCNTL Font Translation Table screen (Figure 4-10) appears.

00 20	10 20	20 20	30 30 0	40 40 @	50 50 P	60 60 °	70 70 p
01 20	11 20	21 21 !	31 31 1	41 41 A	51 51 Q	61 61 a	71 71 q
02 20	12 20	22 22 "	32 32 2	42 42 B	52 52 R	62 62 b	72 72 r
03 20	13 20	23 23 #	33 33 3	43 43 C	53 53 S	63 63 c	73 73 s
04 20	14 20	24 24 $	34 34 4	44 44 D	54 54 T	64 64 d	74 74 t
05 20	15 20	25 25 %	35 35 5	45 45 E	55 55 U	65 65 e	75 75 u
06 20	16 20	26 26 &	36 36 6	46 46 F	56 56 V	66 66 f	76 76 v
07 20	17 20	27 27 '	37 37 7	47 47 G	57 57 W	67 67 g	77 77 w
08 20	18 20	28 28 (	38 38 8	48 48 H	58 58 X	68 68 h	78 78 x
09 20	19 20	29 29)	39 39 9	49 49 I	59 59 Y	69 69 i	79 79 y
0A 20	1A 20	2A 2A *	3A 3A :	4A 4A J	5A 5A Z	6A 6A j	7A 7A z
0B 20	1B 20	2B 2B +	3B 3B ;	4B 4B K	5B 5B [	6B 6B k	7B 7B §
0C 20	1C 20	2C 2C ,	3C 3C <	4C 4C L	5C 5C	6C 6C l	7C 7C !!
0D 20	1D 20	2D 2D -	3D 3D =	4D 4D M	5D 5D]	6D 6D m	7D 7D é
0E 20	1E 20	2E 2E .	3E 3E >	4E 4E N	5E F6 v	6E 6E n	7E 7E ç
0F 20	1F 20	2F 2F /	3F 3F ?	4F 4F O	5F 5F _	6F 6F o	7F 20

(ENTER) to show Result (1) Modify ASCII
                        (2) Overstrike Table   (4) Large
                        (3) Select New Translation Table   (16) Update

Figure 4-10. FONTCNTL Font Translation Table Screen

The FONTCNTL Font Translation Table screen displays 128 (00 - 7F in hexadecimal values) characters and their corresponding ASCII values as displayed at the workstation (some characters cannot be represented on the screen). There are eight columns, each having three items.

The first column displays the actual hexadecimal code that the printer receives; you cannot modify this field.

The second and third columns are different representations of the same character; one in hexadecimal notation and the other is ASCII. The second and third columns are the "To be printed as ..." columns. In other words, whenever the computer receives a hexadecimal number in the first column, the printer is to print that character as displayed in the third column whose hexadecimal value is shown in the second column.

3. Modify the translation table by either changing the hexidecimal value or typing over the ASCII character in the table.

   - To change the hexidecimal value, move the cursor to the hexadecimal value that you want to change and enter the hexadecimal value that you want printed.

   - To type in the ASCII character, press PF1 to access the ASCII characters (to the extent that the workstation can produce the character that you want). Move the cursor to the character you want to change and type over it with the character from the keyboard that you want to print. You can alternate between hexadecimal and ASCII modifications by pressing PF1.

The PF 2 key accesses the table to modify the overstrike characters and the PF 3 key accesses the menu to change Countries or Languages. Refer to the Remarks section at the end of these steps for the procedure to change overstrike and Country or Language.

4. When you are satisfied with the modifications to the font translation table, press PF16. The FONTCNTL Translation Table Output Specification screen (Figure 4-11) appears.

```
FONTCNTL              Translation Table Specification              PTCHXLAT
(c) Copr. Wang
_____

                        DEVICE  = LIS12/24

             To Replace the Existing Translation Table
                With the Updated Translation Table
                         Press (ENTER)

                             OR

        Create a New Font File by Specifying the Following Fields:

                        FONTNUM  = 11_

          DESCRIPT = 10 Pitch Courier Portrait - ASCII_____

          XTABLE  = COURIERA        XLIB  = @31310P@        XVOL  = SYSTEM
_____

( 1) Return

                                                      (16) Main Screen
```

Figure 4-11.   FONTCNTL Translation Table Output Specification Screen

You now can specify either to replace the old font translation table file with the modified font translation table or to create a new font translation table file from the modified font translation table.

5. To *replace* the font translation table file that you specified as input with the font translation table that you just modified by pressing the ENTER key.

   If you want to *create* a new font translation table from the modified font translation table, continue with Step 6.

6. Specify the number (it must not have been previously assigned) that you want to be assigned to the modified font translation table in the FONTNUM field.

7. Although the DESCRIPT field is optional, you should specify a new description for the modified translation table to distinguish it from the original table.

8. Specify in the XTABLE field the name of the file in which you want the font translation table to reside.

9. Specify in the XLIB field the name of the library in which you want the font translation table to reside. The XLIB field defaults to the font file library.

10. Specify in the XVOL field the name of the volume on which you want the font translation table file to reside. You should place the modified translation table on the system volume to avoid problems that would arise if the specified volume was not mounted.

11. Press the ENTER key to create the new font translation file. When the file is created, the Confirm Font Modification screen appears, as shown in Figure 4-12, with the newly created font file and its associated attributes.

```
FONTCNTL              Confirm Font Modification              PTCHSCCS
(c) Copr. Wang
_____

                    Font Modification Confirmed:

                        XTABLE  = COURIERA
                        XLIB    = a31310Pa
                        XVOL    = SYSTEM

                        has been modified for

                DEVICE  = LIS12/24    FONTNUM  = 11




_____


( 1) Return

                                                      (16) Main Screen

```

Figure 4-12.   FONTCNTL Confirm Font Modification Screen

Remarks

Change Overstrikes — Within the translation table is the overstrike table that displays another 128 (00 - 7F hexadecimal notation) overstrike characters. The overstrike table allows you to create a combination of characters that may not be supported in a font file; for example, the character c with a slash through it can be printed by placing a slash character (/) over a lowercase c. For each entry in the translation table, there is a corresponding entry in the overstrike table. Each single character in the translation table is printed on the page in a single character space together with its corresponding character in the overstrike table. Since most of the overstrike table contains blanks, the result in most cases is the printing of a single character.

To access the Overstrike Translation Table screen, press the PF2 key. To alternate between the Base Translation Table screen and the Overstrike Translation Table screen press the PF2 key again. If the font you are changing is a WISCII font (00-FF), then PF2 allows you to toggle between the Upper and Lower table. You can alternate between hexadecimal and ASCII modifications by pressing PF1.

To print the slash character (/) over the character c (63 in the font table), place the slash character in the corresponding entry (63) in the overstrike table. When the character c is printed, the slash character is also printed in the same character space.

Change Country or Language — To select another country or language, press PF3 (Set New Translation Table), and the FONTCNTL National Language Selection screen appears (refer to Figure 4-7 and the corresponding caution notice).

Print Catalog

Print catalog allows you to print a catalog of all the fonts that have been installed through the FONTCNTL utility. You can also display it on your workstation screen.

To print a copy of the catalog, press the PF15 key. The message "In Progress" appears temporarily on the screen. When it disappears, the process is complete which means the print file, FONTLIST, has been moved to your print library. You can now print a copy of the print file by accessing your print library.

A Sample FONTCNTL Procedure

You can control FONTCNTL processing through the VS Procedure language. If you create a VS Procedure language procedure to run FONTCNTL, you must specify the device name in the Device field on the FONTCNTL Device Selection screen (Figure 4-2).

For detailed information about the syntax of the VS Procedure language, refer to the *VS Procedure Language Reference*.

Although FONTCNTL can be run through a procedure, the FONTCNTL utility is predominantly an interactive utility and procedures are recommended only for the installation of fonts onto the system volume. The following sample procedure installs a font for the LIS-12/24 printer as Font 99 and displays the first screen of the review function.

```
PROCEDURE
   RUN FONTCNTL 2
      ENTER DEVSCRN DEVICE = LIS-12/24
      ENTER FONTADD FILE = COURIER, LIBRARY = @31310PN
         VOLUME = SYSTEM, FONTNUM = 99
      ENTER FONTCOPY DESCRIPT = "10 PITCH COURIER VIA PROCEDURE"
      ENTER FONTSCCS 16
      ENTER FONTCNTL 1
      ENTER DEVSCRN DEVICE = LIS12
RETURN
```

THE FORMCNTL UTILITY

Using the FORMCNTL Utility you can create and maintain a file of electronic form definitions. Each form definition controls the format of a specific printing paper form for each VS serial printer configured on your system.

Accessing FORMCNTL Utility

You cannot run the FORMCNTL utility through a VS procedure because the utility does not use GETPARM requests. You access FORMCNTL processing using the following steps:

Procedure

1. Press PF1 (Run Program or Procedure) from the Command Processor menu.

2. Enter FORMCNTL in the Program field (and library and volume if FORMCNTL does not reside in @SYSTEM@ on the system volume) and press the ENTER key. A status screen with the message "Program FORMCNTL in progress" appears while the system initializes the utility. When the utility is initialized, the FORMCNTL main menu (Figure 4-13) appears with the cursor in the FORM # field.

```
Wang FORMCNTL — Version xx.xx.xx                    Copyright Wang 1988
_____

PRESS the PFKEY Corresponding to the Desired Function:


  (1) REVIEW, MODIFY or DELETE Forms.
      Start with FORM # ___ PRINTER TYPE _____
      (If Both Blank, the First Definition is Assumed).

  (2) ADD Form

 (13) HELP

 (15) PRINT Forms

 (16) EXIT
```

Figure 4-13. FORMCNTL Main Menu

The FORMCNTL Main menu contains the options available in the FORMCNTL utility. Use the PF keys located on the top row of the keyboard to access the options.

The following list describes the PF keys for the options on the FORMCNTL Main Menu.

PF Key	Function	Description
1	Review	Lets you review, and modify or delete existing printer form control definitions
2	Add	Lets you create a Printer Forms Control Definition
13	Help create	Presents list of instructions to help you a forms control definition
15	Print	Prints a listing of the Forms Control Definitions that exist on the system
16	EXIT	Returns you to the Command Processor

Reviewing a Forms Control Definition

Reviewing a forms control definition lets you review and, or modify the forms definition records.

Procedure

1. Enter the Form # and Printer Type and press PF1. If you do not know this information, leave these fields blank and press PF1. The Forms Control Definition screen (see Figure 4-14) appears.

```
Wang FORMCNTL                           *** FORMS CONTROL DEFINITION ***
_____

                      FORM # 002 - PRINTER TYPE LIS12/24

Length of Form (in Lines) ............................    66 (6 - 144)
Actual Number of Lines per Physical Page.

Vertical Spacing (Optional) ..........................     6  Lines / Inch
Number of Lines per vertical inch.                        (3, 4, 6, 8)




Font Selection (Optional) ............................   002  (1 - 999)
Font to be used to print the data.
_____

(ENTER) to Review FORM   (8)  Find      (9)  Modify   (13) Help
(2)  First               Form # ___     (12) Delete   (16) Main Menu
(5)  Next                Type _____
```

Figure 4-14.   Forms Control Definition Screen

If you entered the FORM # and PRINTER TYPE fields, they are displayed. If you left these fields blank, the first definition from a printer on the system is displayed. To search for a specific form and printer type use the PF8 key (refer to the Remarks at the end of this section).

The Forms Control Definition screen also displays the Length of Form and the Vertical Spacing values. Depending on which printer you have selected, you may also see the Horizontal Spacing, Ideographic Font Select, Ideogram Latin Ratio, and the Font Selection values.

The following list explains the fields that may appear on the Forms Control screen:

Length of Form	This value indicates the number of lines printed on continuous paper. When combined with the vertical spacing value, it indicates the number of lines printed on cut-sheet paper.
Vertical Spacing (Optional)	The number of lines to be printed on each vertical inch of the form. Allowable values are dependent upon the printer type.

Horizontal Spacing (Optional)	The number of characters to be printed per inch along a line (pitch).
Ideographic Font Select	For font-loading printers, font selection is 1-999 and denotes the default ideographic font number for view of point of micro-code. The ideographic font should never be assigned the same font number as the default ASCII font.
Ideogram Latin Ratio	The select ratio of Ideograms is Latin.
Font Selection	For non-font loading printers, font selection is 0 (primary font) or 1 (secondary font). For font-loading printers (VSOS 7.10 series or higher), font selection is 1-999 and refers to the font number installed with FONTCNTL.

2. Select the appropriate key to perform any of the functions listed at the bottom of the screen. The following list describes the functions of the PF keys available.

PF Key	Function	Description
2	FIRST	Displays the first Forms Control Definition in the file.
5	NEXT	Displays the next sequential Forms Control Definition. A message is displayed if the last definition in the file is currently displayed.
8	FIND DEFINITION	Displays the specific Forms Control definition of the Form# and Printer Type combination you enter.
9	MODIFY	Allows changes to be made to the Forms Control Definition currently displayed. The Channel Definitions can also be changed (refer to the Remarks section).
12	DELETE	Allows removal of the Forms Control Definition currently displayed. If the last definition is deleted, the display is positioned to the first definition. If you delete all definitions, FORMCNTL returns to the main menu.
13	HELP	Allows you to display these instructions on the screen.
16	MENU	Returns to the main menu.

Remarks

FIRST Definition — If no file definitions exist, the Forms Definition file is currently empty (as it is on system initialization). Return to the main menu (PF16) and select the ADD function to enter a forms definition.

FIND Definition — Enter the form number (use range of 000 to 254) and a valid device (printer) type number then press PF8 the system displays the form Definition record. If that forms definition record does not exist, the system searches for the next combination of the printer type number and form number; otherwise, an error message appears.

MODIFY — When you press the ENTER key on the Forms Control Definition screen, part of the Vertical Forms Control Channel Definition screen (see Figure 4-17) appears. The Vertical Forms Control Channel Definition screen corresponds to the Form # and Printer Type combination entered on the main menu and Forms Control Definition screens.

An X in the channel column indicates that the channel is defined for that line. Note that Channel 1 is always defined for Line 1 and that Channel 1 cannot be defined for any other line.

To change the channel definition of the forms control definition currently displayed, press PF9. The entire Vertical Forms Control Channel Definition screen is displayed.

Note: When a VS System is initially installed, no form definitions exist. The system default accommodates 14 by 11 continuous paper with 66 lines per page at 6 lines per inch, or an 8 1/2 X 11 cut-sheet paper with 66 lines at 6 lines per inch. The default character set or font is used. If you do not request a special form, entries in the Print Queue are assigned Form 000. To establish a default Forms Definition for Form 000, you must execute FORMCNTL, and the system administrator must add a definition for Form 000.

Adding New Forms Control Definition

The ADD function creates new forms control definition information for the forms definition file (FORMDFFN).

When you create a forms control definition, perform the following tasks:

1. Assign an identification number
2. Indicate the Form length or cut-sheet paper size
3. Define the vertical line spacing
4. Define the horizontal character spacing (pitch) (where applicable)
5. Choose the ideographic font selection and the ideogram latin ratio (where applicable)
6. Choose the font selection (where applicable)
7. Assign the vertical line skip (channel assignment)
8. Assign the Top of form (channel assignment)

Perform the following steps to add a forms control definition.

1. Press PF2. The Add Forms Control Definition Screen (Figure 4-15) appears.

```
FORM # ........ ___          – Supply the Form Number (000 - 254).

PRINTER TYPE .. _____    – Supply the Printer Type.
                              Select from the following:

              2273V1  –  250 1pm Rem Band Ptr
              2233    –  100 cps R Matrix Ptr
              2235    –  180 1pm R Matrix Ptr
              2233K   –  100 cps KATAKANA Ptr
              2235K   –  180 cps KATAKANA Ptr
              DWR20   –  20 cps Rem Daisy Ptr
              DWOS20  –  20 cps Daisy Ptr
              6581W   –  35 cps Daisy Ptr
              6581WC  –  35 cps Wide Daisy Ptr
              5573    –  250 1pm Band Ptr

(Enter) to Add              (5) to Display MORE Printer Types

                                             (16) Main Menu
```

Figure 4-15.   Add Forms Control Definition Screen

2. Enter the FORM # to identify this form control definition and move to the PRINTER TYPE field.

3. Enter the type of printer that you want the form control definition to apply. The screen presents a list of printer types. Press the PF5 key to view more printer types. Press the ENTER key when finished. The Forms Control Definition Screen (see Figure 4-16) appears.

DP

FORM # 123 – PRINTER TYPE LIS12/24

Length of Form (in Lines) .... _66 (6 – 144)
Actual Number of Lines per Physical Page.

Vertical Spacing (Optional) .... _6 Lines / Inch
Number of Lines per vertical inch.   (3, 4, 6, 8)

Font Selection (Optional) .... 001 (1 - 999)
Font to be used to print the data.

    (ENTER) to Continue

                                                    (16) Main Menu

Figure 4-16.   Forms Control Definition Screen

The Forms Control Definition screen contains the Length of Form (in lines) and the Vertical Spacing fields. Depending on the printer that you have selected this screen may also contain the Horizontal Spacing, Ideographic Font Selection, Ideogram Latin Ratio, and the Font Selection fields. The values for the length of form and vertical spacing are specific for each size of cut-sheet paper. Refer to the tables for DP printing in Appendix C to determine these two values.

The following list explains the fields that may appear on the Forms Control Definition screen. Specify the values you want for each of the fields.

Length of Form	The number of lines that can be printed on each physical page for continuous forms, or cut-sheet paper (see Appendix C).
Vertical Spacing (Optional)	The number of lines to be printed on each vertical inch of the form. Allowable values are dependent upon the printer type (see Appendix C).
Horizontal Spacing (Optional)	The number of characters to be printed per inch along a line (pitch).
Ideographic Font Select	For font-loading printers, font selection is 1-999 and denotes the default ideographic font number for view of point of micro-code. The ideographic font should never be assigned the same font number as the default ASCII font.

Ideogram Latin Ratio	The select ratio of Ideograms is Latin.
Font Selection	For non-font loading printers, font selection is 0 (primary font) or 1 (secondary font). For font-loading printers (VSOS 7.10 series or higher), font selection is 1-999 and refers to the font number installed with FONTCNTL.

4. Make the appropriate values in each of the fields and press the ENTER key to process the Forms Control Definition screen. The Vertical Forms Control Channel Definition screen (Figure 4-17) is then displayed.

```
Wang FORMCNTL            *** VERTICAL FORMS CONTROL CHANNEL DEFINITION ***
─────────────────────────────────────────────────────────────────────────
DEFINE THE VERTICAL FORM CONTROL CHANNELS:
Line #  Channel:           1 1 1     Line #  Channel:           1 1 1
on Page 1 2 3 4 5 6 7 8 9  0 1 2     on Page 1 2 3 4 5 6 7 8 9  0 1 2
        I I I I I I I I I  I I I             I I I I I I I I I  I I I
  1  =  X * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
 ***  =    * * * * * * * * *  * * *   ***  =  * * * * * * * * *  * * *
─────────────────────────────────────────────────────────────────────────
(ENTER) to Continue                              (13) Help
                                                 (16) Main Menu
```

Figure 4-17. The Vertical Forms Control Channel Definition Screen

The Vertical Forms Control Channel Definition screen enables you to select the line (or lines) where vertical tab commands are executed (it simulates a 12-channel paper tape). Vertical formatting determines the line numbers on which text is to be printed and the amount of space to be left blank between lines of a page of any type of output.

The following fields appear on the Vertical Forms Control Definition screen:

Line # on Page	The lines on the page for which a channel entry is to be made. Values of Line # on Page cannot exceed the value of Length of Form specified in the Forms Control Definition screen. Line numbers need not be in ascending order nor in any particular location on the screen.
Channel	The channel (or vertical tab) for each line number specified on this screen. A channel is defined by entering a nonblank character in the corresponding column. Channel 1 is always defined for Line 1 (with an X) to represent the Top-of-Form channel. Channel 1 cannot be defined on any other line.

5. Specify the vertical forms control channels that you want and press the ENTER key. The vertical forms control channels are defined and the main menu screen appears.

PRINT CATALOG

Print catalog allows you to print a catalog of all the forms that have been installed through the FORMCNTL utility. You can also display it on your workstation screen.

To print a copy of the catalog, press the PF15 key. The message "Print of FORMDFFN File in Progress" appears temporarily in the left corner of the screen and the print file FORM0000 (where 0000 is a number that increases by 1 each time you print a copy of the catalog) is sent to the print queue. You can now print a copy of the print file by accessing the print queue.

Chapter 5
USING VS DP WITH POSTSCRIPT AND LASERJET PRINTERS

INTRODUCTION

You can print VS print files that contain data processing (DP) text, graphics, or images on the PostScript printer; you can print only DP text files on the LaserJet printer.

FONTS SUPPORTED

The VS DP print environment supports the standard Wang fixed-pitch typewriter fonts (10-, 12-, and 15-pitch sizes in portrait and landscape orientations) for the LCS15 and LDP8 and it supports Courier typographic fonts (6-, 8-, 10-, and 12-point sizes in portrait and landscape orientations) for the LCS15 only. Courier is a monospaced font family in which each character has the same width.

VS DP does not support any proportionally spaced (PS) pitch typewriter fonts or any typographic fonts other than Courier.

USING FONTS

Before you can print and use the different fonts, that you have installed, you have to run the FONTCNTL and FORMCNTL utilities. These utilities do the following:

FONTCNTL Utility — The FONTCNTL utility lets you assign fonts for print files sent to font-loadable printers, such as the PostScript and LaserJet.

When you print a text file, PostScript and LaserJet printers use the default font (installed with FONTCNTL) unless you specify another font in a printer form definition with FORMCNTL. Refer to Chapter 4 in this section for the procedure to run the FONTCNTL utility.

FORMCNTL Utility — The FORMCNTL utility lets you create and maintain a file of form definitions for PostScript and LaserJet printers. You create a form definition for each paper size and font combination you want to use.

If you submit a print request and specify a form definition that has not been defined with FORMCNTL, the printer assumes a default 8.50- x 11.00-inch (215- x 280-mm) page, with 6 lines of text per inch. It also uses the default font (as defined through FONTCNTL).

Refer to Chapter 4 in this section for the procedure to run the FORMCNTL utility.

PRINTING ON THE VS

You use the standard VS printing methods to send print requests to PostScript and LaserJet printers. For information on the VS printing capabilities and methods of handling print output, refer to the *VS Programmer's Introduction.* Refer to the *VS System Operator's Guide* for information on how to control the print queue.

If you need to reset either the PostScript or the LaserJet printer (by turning it off and on), make sure that all entries in the print queue have a Hold status before resetting it.

POSTSCRIPT

PostScript is an industry-standard page description language (PDL) that generates the output for application programs. It precisely describes the contents of each page to the LCS15. PostScript has been widely accepted as the standard PDL for desktop and commercial publishing applications.

The PostScript software resides in the printer and works with the Wang application(s) you use to produce high-quality output. Since the Wang applications have been modified to use the capabilities of PostScript, you do not have to know the PostScript language or deal directly with it.

If you are familiar with programming languages and want to create your own PostScript programs, refer to the *PostScript Language Tutorial and Cookbook* and the *PostScript Language Reference Manual.* Both manuals are available through WangDirect. Before the LCS15 can execute your PostScript program, you have to convert your source file into a VS print file through the PSPRINT utility.

PSPRINT UTILITY

PSPRINT is a VS utility that converts a PostScript source (input) file into a VS print file. The PostScript source file must be a variable-length, consecutive file. When you use PSPRINT, you specify whether you want the utility to put the VS print file in the print queue. The utility can either submit the print file to the queue or save it in the library and volume you specify. You use the Manage FILES/LIBRARIES function on the Command Processor screen to print files in a library.

When you run PSPRINT, you specify the name and location of the PostScript source file and the output print file. You also specify the print parameters for the output print file.

The PSPRINT utility consists of two executable programs:

PSPRINT — This program interacts with your workstation to get the input and output files and print parameters.

PSPRT — This program performs the actual conversion. Once the input and output files are defined, PSPRINT invokes PSPRT. If PSPRT executes successfully, PSPRINT gets the print parameters and prints the file that PSPRT created.

Note: If you cancel the PSPRINT utility while PSPRT is executing, your default print mode may have been changed to K (Keep). Check your default print mode (through Set Usage Constants) and reset it if necessary.

PSPRT confirms that the input file is a valid VS consecutive file. However, it does not check the validity of the PostScript source program. PSPRT checks Column 74 in each line to see if it contains a line number. If it does, PSPRINT assumes the number represents a comment and truncates the record. Make sure that you do not have any programming code beyond Column 73 in each line.

You can run PSPRINT as a standalone utility or invoke its programs from another procedure or program. If you are going to run PSPRINT as a standalone utility, refer to the section entitled "Running the PSPRINT Utility" later in this chapter. If you are going to invoke the PSPRINT and/or PSPRT program, refer to the discussions that follow.

PSPRINT Program

A procedure or program can invoke the PSPRINT program. While the program does not have any parameters, a GETPARM can be resolved by using a PUTPARM from programs or ENTER from procedures.

PSPRT Program

PSPRT has a Command Language Environment (CLE) interface enabling any language that supports CLE to invoke it. The structure of PSPRT resembles a USERSUB. Its usage is given in Table 5-1.

Table 5-1.   Usage of PSPRT

Position	Argument	Type	Size	Comments
arg1	infile	Alpha	8	Input file name.
arg2	inlibrary	Alpha	8	Input file library name.
arg3	involume	Alpha	8	Input file volume name.
arg4	outfile	Alpha	8	Output file name.
arg5	outlibrary	Alpha	8	Output file library name.
arg6	outvolume	Alpha	8	Output file volume name.
arg7	ret_code	Integer	4	Return code from PSPRT. 0 indicates a successful execution, 1 indicates an invalid input file, and 2 indicates an invalid output file.

Refer to the *VS USERSUBS Reference* for more information.

If you do not want PSPRT to submit the print file to the print queue, the calling applica-
tion or program has to set the print mode to K (Keep). The default print mode places the
print file in the print queue with a Spool or Hold status.

Running the PSPRINT Utility

To run the PSPRINT utility, perform the following steps:

Procedure

1. Press PF1 (RUN program or procedure) at the VS Command Processor screen. The
   Run screen appears.

2. Type PSPRINT (uppercase only) in the PROGRAM field (enter the library and
   volume if PSPRINT does not reside in @SYSTEM@ on the system volume) and
   press ENTER. After a few seconds, the PSPRINT Assign Input File screen, shown in
   Figure 5-1, appears.

```
Wang VS GETPARM v 7              Parameter Reference Name: INFILE
                                               Message Id: 0001
                                            Component: PSPRNT
                   Information Required by PSPRINT
_____


         PLEASE ASSIGN THE INPUT FILE BY SPECIFYING:

   FILE  = ■■■■■■■■    LIBRARY = ■■■■■■■■    VOUME  = ■■■■■■


   PSPRINT Utility VER xx.xx.xx (c) Corp. Wang Laboratories, Inc. 1988


                          (16) Exit
```

Figure 5-1.   PSPRINT Assign Input File Screen

3. Type the file name of the PostScript source file in the FILE field.

   The utility supplies your default input library and volume as defined in Set Usage
   Constants.

4. If the PostScript source file does not reside in the supplied library and volume, make
   the necessary changes.

5. Press ENTER. The PSPRINT Assign Output File screen, shown in Figure 5-2,
   appears.

```
Wang VS GETPARM v 7                  Parameter Reference Name: OUTFILE
                                              Message Id: 0002
                                           Component: PSPRNT
                  Information Required by PSPRINT
    _____

                  PLEASE ASSIGN THE INPUT FILE BY SPECIFYING:

    FILE = ■■■■■■■■      LIBRARY = ■■■■■■■■      VOUME = ■■■■■■


    IF THE FILE EXISTS:
    REPLACE  = N    SHOULD IT BE SCRATCHED WITHOUT WARNING?   (Y : N)




                             (16) Exit
```

Figure 5-2. PSPRINT Assign Output File Screen

The Output File screen displays the file name that you entered for the input file. The utility supplies your default spool library and volume as defined in Set Usage Constants.

6. If you want to change the file name or place the print file in a different location, make the necessary changes.

7. If you want the utility to replace the output file if it already exists, type Y in the REPLACE field.

8. Press ENTER.

Note: If an N is in the REPLACE field and the output file already exists, an error message appears. You must type Y in the REPLACE field.

The utility converts the PostScript source file into a VS print file that the LCS15 can execute as a PostScript program. It then displays the PSPRINT Print Parameters screen shown in Figure 5-3. The utility supplies your default print parameters as defined in Set Usage Constants.

DP

PLEASE ENTER PRINT PARAMETERS BY SPECIFYING:

```
PRNT MODE   = H          S (SPOOL), H (HOLD), K (KEEP – DO NOT QUEUE)
COPIES      = 001        NUMBER OF COPIES (0-255)
PRT CLASS   = D          PRINT CLASS (A-Z or <BLANK>)
PRTFORM     = 000        FORM NUMBER (0-255)
```

DISPOSITION OF FILE AFTER PRINTING:

```
FILEDISP    = R ·         R  (REMOVE from queue and SAVE file),
                          S  (SCRATCH file),
                          Q  (REQUEUE file)


                          (16) Exit
```

Figure 5-3. PSPRINT Print Parameters Screen

9. If you do not want to use your defaults for the VS print file the utility created, make the necessary changes.

10. Press ENTER.

PSPRINT sends the print file to the LCS15 printer if you specified a print mode of S or H. If you specified a print mode of K, the utility saves the print file on your default input library and volume (defined in Set Usage Constants) instead of submitting it to the print queue.

PRINTING POSTSCRIPT PROGRAMS

To help you understand how to print a PostScript program, two sample procedures follow. In the first procedure, the PostScript program was created on a VS. In the second, the PostScript program was created on a PC.

Printing a PostScript Program Created on a VS

Using the VS EDITOR utility, you create a PostScript program source file and name it BORDER. When saving the source file, you specify the library BCSSAVE on volume SYST#1. Now you have to convert BORDER into a VS print file with the PSPRINT utility. (If you print BORDER without using PSPRINT, the LCS15 prints the text exactly as it appears on the screen. This may be useful if you just want a printed copy of your program.)

To convert BORDER into a VS print file, perform the following steps:

Procedure

1. Use the RUN program or procedure function on the VS Command Processor screen to execute the PSPRINT utility. The PSPRINT Assign Input File screen (Figure 5-1) appears.

2. Specify BORDER as the source file name, BCSSAVE as the library name, and SYST#1 as the volume name. Press ENTER. The PSPRINT Assign Output File screen (Figure 5-2) appears. PSPRINT supplies your default print library and volume (defined in Set Usage Constants), #BCSPRT and SYSW#1.

3. Specify BORDER as the print file name and press ENTER to accept the default print library and volume. The PSPRINT Print Parameters Screen (Figure 5-3) appears. PSPRINT supplies your default print parameters (defined in Set Usage Constants): print mode equals H, number of copies equals 001, print class equals D, print form equals 000, and file disposition after printing equals R (remove from queue and save).

4. Make sure your default print class corresponds to one of the print classes assigned to the LCS15. Press ENTER to accept your default print parameters.

   PSPRINT converts your PostScript program into a VS print file and submits it to the print queue with a Hold status. When PSPRINT is complete, the VS Command Processor screen reappears.

5. Use the Manage QUEUE function on the VS Command Processor screen to access the print queue and release the print file to the LCS15.

Printing a PostScript Program Created on a PC

Using the NotePad™ editor in PageMaker™, you create a PostScript program source file and name it LOGO1. You store the source file on Drive C in the directory /PSFILES. Now you have to transfer your source file to the VS through the Data Exchange utility.

Note: Refer to The Wang Professional Computer PC/VS Data Exchange Utility User's Manual *for the procedures to access and use the Data Exchange utility and for samples of the Data Exchange utility screens.*

To send your PostScript program to a VS and convert it into a VS print file, perform the following steps:

Procedure

1. Attach your PC to the VS from the File Server menu, through VS Terminal Emulation, or through PC MultiStation.

2. Using your PC, enter the Data Exchange utility. The Data Exchange Utility Main Input menu appears.

3. Specify PC text file as the data type of your PostScript program and press EXEC. The Data Exchange Utility Main Output menu appears.

4. Specify VS Consecutive as the data type of your output file and press EXEC. A Data Conversion screen appears.

5. Type C:/PSFILES/LOGO1 as the pathname and press EXEC.

6. Specify which rows and/or columns or pages and/or lines of your PostScript source file you want the utility to convert and send to the VS.

7. Specify the maximum record size, record type, starting output column position, approximate number of records, and protection class.

8. Type SYST#1 as the output volume (OUTVOL) and BCSSAVE as your output library (OUTLIB).

9. Press EXEC to begin the data conversion and transfer. When the process is complete, the Data Exchange utility displays a completion message indicating the size of the file.

10. Log on to the VS and convert LOGO1 into a VS print file with the PSPRINT utility. See the section entitled "Printing a PostScript Program Created on a VS" to convert a PostScript program into a VS print file and send it to the LCS15.

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Appendix A
FORMATTING WITH PROPORTIONAL SPACE FONTS

OVERVIEW

Wang laser printers print in both fixed spaced (monospaced) and proportional spaced fonts. Fixed spaced fonts are similar to typewriter fonts. Proportional spaced fonts are similar to typographic fonts and the PS typewriter fonts.

With fixed spaced fonts, each character is assigned the same amount of space. Because the fonts used to display text on Wang workstations and most of the fonts previously used with laser printers are fixed spaced typewriter fonts, the workstation and the printer display and print lines and pages with the same format.

When you use typographic or the PS typewriter fonts, each character has a different width based on general character measurements. These fonts format the printed text differently than it appears on your screen. The Wang workstation displays text in fixed space typewriter fonts. When you print with proportional spaced fonts, what you see on the screen may not be the same as what prints on a document.

The PostScript and the LaserJet printers can use both typewriter and typographic fonts. Other Wang printers print only with typewriter fonts, but they can type in proportional space when using the PS typewriter font.

Because proportional spaced fonts are different from fixed spaced fonts, they need detailed explanations. This chapter reviews fixed pitch typewriter fonts, explains proportional spaced typographic and PS typewriter fonts and points out the differences between them, and gives you some hints to help you use the proportional spaced fonts effectively.

WHAT ARE FONTS

Fonts are sets of characters that have the same size and the same typeface. *Pitch*, which refers to the width of a character, is the unit of measurement in typewriter fonts. *Point*, which refers to the height of a character, is the unit of measurement in typographic fonts.

Typeface is the design of the individual characters. Fonts can have a variety of typefaces such as, Courier, Times, and Helvetica.

FIXED SPACED TYPEWRITER FONTS

The fixed spaced typewriter fonts are described in terms of pitch, or characters per inch. For example, a 10-pitch font has 10 characters per inch, a 12-pitch font has 12 characters per inch and so on.

Fixed space means that each character has the same "cell" width. Even though individual characters may have different widths, the amount of space, or "cell", allocated to that character is always the same; for example, 0.1 inches for each character in a 10-pitch font.

When a document is printed using a WP or WP Plus fixed spaced typewriter font, the document format line contains a number of characters that defines the basic width of the line. When that document is printed, the number of characters on a printed line is equal to the number of characters set in the format line. Because the number of characters will be the same for each font, the actual width of the printed line varies depending on the pitch of the typewriter font used. For example, if the format line is set at 80 characters, the width of a printout would be

- 8.0 inches for 10 pitch
- 6.67 inches for 12 pitch
- 5.33 inches for 15 pitch.

Example A-1 shows how a document with the same number in the format line would appear when printed. A format line of 60 is used only because of the size limitations in this document.

Example A-1. Document With Different Fixed Pitch Typewriter Fonts

---

```
These lines are printed in a 10 pitch typewriter
font.  The format line has been set at 60
characters per line.  Notice how each example has
no more than 60 characters per line -- it is the
change in font that causes the change in the width
of the printed document.

These lines are printed in a 12 pitch typewriter
font.  The format line has been set at 60
characters per line.  Notice how each example has
no more than 60 characters per line -- it is the
change in font that causes the change in the width
of the printed document.

These lines are printed in a 15 pitch typewriter
font.  The format line has been set at 60
characters per line.  Notice how each example has
no more than 60 characters per line -- it is the
change in font that causes the change in the width
of the printed document.
```

Example A-1 shows that the most important characteristic of fixed spaced typewriter fonts is the correlation between what you see on the screen and the printout. The line counts and line breaks in all three paragraphs are similar while the widths of the documents in each paragraph vary according to the pitch of the typewriter fonts.

Vertical Line Spacing in Typewriter Fonts

In the vertical or line feed direction, the same fixed space or "cell" size concept also applies. For example, all characters in a 10-pitch font would have the same cell height. Particular lines per inch values are associated with specific character sizes. Because the 10- and 12-pitch fonts are large and require more vertical space, they appear best when printed at 6 lines per inch. The 15-pitch font, which is much smaller and requires less vertical space, appears best when printed at 8 lines per inch.

PROPORTIONAL SPACED FONTS

When you print text with proportional spaced fonts, each character is assigned a specific amount of cell space based on the width, height, and typeface of the character. Example A-2 shows how the character width can affect spacing assigned to characters. The letter W is much wider than the letter i and prints in a wider space than the letter i. In the example, there are an equal number of the letters w and i — the w's require much more space.

Example A-2. Character Spacing for Proportional Spaced Fonts

wwwwwwwwwwwwwwwwwwwwwwwwwww

iiiiiiiiiiiiiiiiiiiiiiiii

Note: In the LCS15, the Courier font is a typographic font that prints as a fixed spaced font. You can adjust the point size, but each character prints in a fixed space.

Typographic and PS Typewriter Font Height Differences

Cell height has an effect on the spacing of characters printed in typographic fonts but not PS typewriter fonts.

The PS typewriter fonts print in only one cell height. The height of each character is approximately equal to the height of a 12-pitch character; the width of each character is different but the cell height is constant.

Typographic fonts use points as the unit for size. Point size indicates the overall height of a character cell in the font. Points are 1/72 of an inch. With typographic fonts you can change the point size and make the characters larger or smaller.

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When you print in different point sizes, the proportional spacing for typographic fonts is affected. As you increase the point size of a font, the size of the characters increases and the amount of space for the printed character must increase proportionally as well. Example A-3 shows printed text in the Helvetica font using different point sizes. Notice that as the point size increases the overall space for each character and line increases.

Example A-3. Helvetica Font Point Size Samples

TEXT 6 point text
TEXT 8 point text
TEXT 10 point text
TEXT 12 point text
TEXT 14 point text
TEXT 16 point text
TEXT 18 point text
TEXT 20 point text
TEXT 22 point text
TEXT 24 point text
TEXT 26 point text
TEXT 28 point text
TEXT 30 point text
TEXT 32 point text
TEXT 34 point text
TEXT 36 point text

TYPEFACE EFFECTS ON PROPORTIONAL SPACING

The amount of space for a printed character is also affected by the typeface of the font. Different typefaces may require more or less space for the printed character. Example A-4 shows how letters T and t are assigned different space according to typeface and character width. The letters T and t are printed in 30 point, and are assigned different typefaces.

T T T T T T t t t t t t

Formatting in Proportional Space

Because the factors stated in the previous section affect the spacing of proportional text, the formatting of the printed text is unpredictable — what you see on the screen may not be what is printed on paper.

In the Wang applications (WP and WP Plus) the terminal screen always uses fixed pitch fonts, but the output of typographic and PS typewriter fonts are proportionally spaced. In proportional spaced printing, the line width of the document is calculated as an area based on the number of characters set in the format line.

Proportional spaced printing calculates the page width by assigning a 12-pitch width to each space or character in the format line (each character equals 1/12 inch). For example, since each character is assigned 1/12 inch, an 84 character format line would be 7.0 inches wide (1/12 x 84 characters). Tables A-1 and A-2 demonstrate the differences in line width calculation between fixed pitch and proportional spaced printing.

Table A-1.   Line Width Calculations for Fixed
Pitch Fonts

Format Line	10 Pitch	12 Pitch	15 Pitch
70	7.0	5.83	4.67
75	7.5	6.25	5.0
80	8.0	6.67	5.33

Table A-2.   Line Width Calculations for
Proportional Spaced Fonts

Format Line	10 Point	PS Pitch	18 Point
70	5.83	5.83	5.83
75	6.25	6.25	6.25
80	6.67	6.67	6.67

As the tables show, for a proportional spaced font it is the length of the format line, not the point size, that changes the area used for line length — for any given format line, the line width is the same regardless of font size. Line breaks vary depending on the point size and the typeface of the font.

Example A-5 shows how a document with the same format line should appear in different typographic fonts. The line width for each of the fonts is the same; it is the change in font that determines the number of characters per line.

APPENDIXES

These lines are printed in 18 point typographic font. The format line has been set at 72 (1/12 x 72 = 6 inches). Notice how each example has a different amount of characters per line but the area for the width is constant. It is the change in font that causes the change in amount of characters per line.

These lines are printed in 12 point typographic font. The format line has been set at 72 (1/12 x 72 = 6 inches). Notice how each example has a different amount of characters per line but the area for the width is constant, It is the change in font that causes the change in amount of characters per line.

These lines are printed in 8 point typographic font. The format line has been set at 72 (1/12 x 72 = 6 inches). Notice how each example has a different amount of characters per line but the area for the width is constant. It is the change in font that causes the change in amount of characters per line.

Line Spacing for Proportional Spacing

Line spacing is different for typographic fonts and PS typewriter fonts. Because PS typewriter fonts have a fixed height (approximately equal to 12 pitch), the vertical line spacing is similar to that of typewriter fonts. Typewriter fonts print best when the line spacing is 6 lines per inch.

In typographic fonts, applications such as WP and WP Plus use a line spacing formula to determine the vertical line spacing of the text. The formula determines the amount of space from the base of one line of text to the base of the next line of text. The formula is as follows:

Two-thirds of the maximum point size of the current line plus one-third of the maximum point size of the previous line equals the amount of space from the base of the previous line to the base of the current line when you use single-line spacing.

The typographic vertical line spacing formula ensures that lines of text with different point sizes do not overlap one another when you use single or larger line spacing.

Therefore, varying point size fonts have varying heights and varying line spacings. This fact, along with the differences in line breaks, is the reason that proportional spaced fonts also page break differently. Refer to Example A-3 to see how a change in point size causes a change in the line spacing of the text.

USING TYPOGRAPHIC FONTS

Because the text in a screen display appears in a uniform size regardless of the pitch or point size of the font, the format of printed text may not match that of the corresponding screen display. Line endings and the number of lines that fit on a page may differ from screen display to printout when you use typographic fonts. (With the exception of the Courier font family, in the LCS15, all typographic fonts are proportionally spaced fonts.)

To help you format your documents, some hints for using typographic fonts follow:

* If you need to line up items vertically that consist of variable characters such as a table of contents with dot leaders, use a fixed pitch typewriter font or a monospaced typographic font. Example A-6 shows a sample table of contents. The first table of contents has a typographic font assigned to it; it is difficult to align the chapter numbers at the right because of the various cell widths of each character. The second table of contents has a typewriter font assigned. The chapter numbers align correctly because each character occupies a fixed space.

Example A-6.   Table of Contents Alignment

Also notice that even though both tables of contents have the same number of leader dots, the line lengths in each table vary. Leader dots in proportional space fonts are assigned the minimum cell width, while those in typewriter fonts are assigned the same fixed cell width given to every character.

* The underscore and double underscore characters have the minimum width assigned in a proportionally spaced typographic font. As a result, if you create horizontal lines, you should double the length of the line on the screen. For example, these two lines on the screen

appear as one line on the printout.

It may be easier to assign a typewriter font to the underscored line of spaces.

- When you use a proportionally spaced typographic font to align items vertically, keep the use of tabs and indents to an absolute minimum (try to use only one tab or indent per column) — excess tabs and indents adversely affect column alignment. Depending on the spacing between tabs, large and small point-size typographic fonts may affect the formatting of printed text.

Compare the alignment of columns in Example A-7 (as they appear on the screen) to the alignment in Example A-8 (as they appear in the printout). These two examples illustrate the formatting differences between a screen display and the corresponding printout.

Example A-7.   Text as It Appears on the Screen

```
This paragraph and the columns are in 18 point.  The columns appear to align
correctly on the screen; however, when printed out, in Example A-8, the
columns align differently.

Column 1  ►Column 2  ►Column 3◄
```

Example A-8.   Text as It Appears on the Printout

In this printout the columns have aligned differently. Column 1 and column 2 align with the first two tabs, but column 2 writes over the second tab causing column 3 to fall to the beginning of the next line.

Column 1 Column 2 Column 3

Appendix B
HEX CODES AND CHARACTER SET TABLES

OVERVIEW

A character set is the symbols and characters that make up a font. The character set tables contain all the characters and symbols of a font, keyboard or printer. Each character or symbol is assigned a hex code which determines the position of a character in the character set table or "map."

This appendix contains the hex codes of

- The keyboard characters and special characters contained in each character set for Wang printers

- The characters and symbols in the typographic fonts for LaserJet and PostScript printers

The character sets or fonts available on the various Wang printers are for both standard Wang WP and WP Plus. Many character sets can be stored on the system disk.

A wide variety of character sets are available on the various printers, depending on your system and application. For more information, refer to the *WangDirect Supplies Catalog* or contact WangDirect Express800 at 1-800-225-0234.

MATRIX PRINTERS

Figure B-1 contains the character set and hex code values for the 5533, 5535, 5533-1, and the 5535-1.

To find the two-digit hex code for a character, first locate the printer character in the body of the figure. The first digit is located at the top of the column; the second digit is located at the left of the row. For example, the hex code for the character A is 41.

Hex Code	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		o	≡	ℓ	Ɔ	ρ	°	'	(	d	φ	P	⊂	ε
1	√	ı	∇	Γ	α	γ	◆	!	)	З	A	⊗	Ɔ	∈
2	•	₂	∩	Θ	φ	θ	▶	"	;	Э	B	≍	∩	∉
3	←	₃	Ψ	Σ	ψ	σ	◀	⋕	?	Э	⇐	⇒	U	¼
4	→	₄	Φ	™	Φ	τ	→	$	=	⅓	↔	Γ	∧	⅓
5	±	₅	÷	Ξ	ε	ζ	—	%	‡	⅔	E	...	∨	¾
6	Σ	₆	□	∝	‖	†	∣	Я	¶	★	◊	⌒	C	℘
7	∣	₇	∧	Δ	λ	δ	■	ₘ₂	ℓ	‡	ℵ	L	¬	‾
8	(	₈	∥	∞	η	χ	‼	[	ι	∫	H	X	∀	˜
9	)	₉	}	Υ	ι	υ	↕	]	§	Θ	∣	✓	Ⅎ	ˆ
A	⊕	:	∫	≃	∫	ζ	↓	+	⊥	◁	▷	Z	↗	·
B	\\	↕	∥	Π	κ	≪	↑	✳	∠	O	K	≠	↘	¨
C	/	<	Ω	\	ω	≫	←	&	⊕	×	≗	♯	↙	
D	—	©	∂	π	μ	≥	≅	,	∮	⊙	M	⊐	↖	
E	.	>	~	β	υ	≤	⊁	⊀	≜	●	N	⊢	ℏ	
F	}	{	↑	o	↓	(	≐	≈	‥	∓	O	∴	∵	ς

Figure B-1.   Character Set and Hex Codes for the U.S. Matrix Printer

Note: Hex codes 00 through 09 and 0A through 0F are control codes that cannot be printed. Hex code 20 is a space.

Figure B-2 contains the WISCII character set and hex code values for the LM400/700/900 Shuttle Matrix Printer. The full WISCII character set is available for all resident fonts except the high-speed draft light font which offers uppercase ASCII characters only as shown in Table B-3.

The LM400/700/900 Shuttle Matrix printer provides three modes for printing text:

- Draft Mode printed in Draft Light, Medium, or Regular font
- Correspondence Mode printed Memo Regular font
- Near Letter Quality Mode printed in Gothic letter font

To find the two-digit hex code for a character, first locate the printer character in the body of the figure. The first digit is located at the top of the column; the second digit is located at the left of the row. For example, the hex code for the character A is 41.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p	o	â	â	ĕ	ĕ	þ	Þ	£
1	!	1	A	Q	a	q		à	à	IJ	ij	Ð	ð	ƒ
2	"	2	B	R	b	r		á	á	i	ı	ý	ý	¥
3	#	3	C	S	c	s		ä	ä	î	î	þ	þ	¼
4	$	4	D	T	d	t		ã	ã	İ	ì	'	'	½
5	%	5	E	U	e	u		←	→	£	{	û	û	¾
6	&	6	F	V	f	v		å	å	ï	ï	ù	ù	^
7	'	7	G	W	g	w		↓	↑	ll	ll	ú	ú	`
8	(	8	H	X	h	x		Æ	æ	Ñ	ñ	ü	ü	´
9	)	9	I	Y	i	y		Ç	ç	ô	ô	©	™	¨
A	*	:	J	Z	j	z		‡	□	ò	ò	®	¤	~
B	+	;	K	[	k	{		•		ó	ó	R	↔	,
C	,	<	L	\	l				ê	ê	ö	ö	∋	o	ˇ
D	-	=	M	]	m	}	±	è	è	õ	õ	«	»	˘
E	.	>	N	↑	n	~	i	é	é	Œ	œ	§	ß	
F	/	?	O	_	o	◊	¿	ë	ë	Ø	ø	¶	•	

Figure B-2.   Character Set and Hex Codes for the LM900 Shuttle Matrix Printer

Figure B-3 contains the ASCII character set and hex code values of the Draft Light font for the LM400/700/900 Shuttle Matrix Printer.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p								
1	!	1	A	Q	a	q								
2	"	2	B	R	b	r								
3	#	3	C	S	c	s								
4	$	4	D	T	d	t								
5	%	5	E	U	e	u								
6	&	6	F	V	f	v								
7	'	7	G	W	g	w								
8	(	8	H	X	h	x								
9	)	9	I	Y	i	y								
A	*	:	J	Z	j	z								
B	+	;	K	[	k	{								
C	,	<	L	\	l	|								
D	-	=	M	]	m	}								
E	.	>	N	↑	n	~								
F	/	?	O	_	o	⌂								

Figure B-3.   Character Set and Hex Codes for the Draft Light Font

Figure B-4 shows the character set and hex codes for text type styles for 5577, 5578, and laser type printers.

To find the two-digit hex code for a character, first locate the printer character in the body of the figure. The first digit is located at the top of the column; the second digit is located at the left of the row. For example, the hex code for the character A is 41.

Hex Code	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p	°	Â	å	Ġ	ġ	Þ	þ	£
1			¡	1	A	Q	a	q	♦	Á	à	IJ	ij	Ð	ð	ƒ
2			"	2	B	R	b	r	►	Ã	á	Ì	ì	Ý	ý	¥
3			#	3	C	S	c	s	◄	Ä	ä	Î	î	Ş	ş	¾
4			$	4	D	T	d	t	→	Å	ã	Ï	ï	´	´	½
5			%	5	E	U	e	u	_	←	→	Í	í	Û	û	¼
6			&	6	F	V	f	v	|	Ă	ă	Ÿ	ï	Ù	ù	¯
7			'	7	G	W	g	w	■	Ì	ŀ	Ŀ	ŀ	Ú	ú	˙
8			(	8	H	X	h	x	‼	Æ	æ	Ñ	ñ	Ü	ü	¨
9			)	9	I	Y	i	y	↕	Ç	ç	Ō	ō	©	™	¨
A			*	:	J	Z	j	z	↓	‡	□	Ò	ò	®	¤	¯
B			+	;	K	[	k	{	↑	●		Ó	ó	Ŗ	↔	,
C			,	<	L	\	l	|	←	Ê	ê	Ö	ö	ª	º	¯
D			-	=	M	]	m	}	±	Ë	è	Õ	õ	«	»	¯
E			.	>	N	↑	n	~	|	É	é	Œ	œ	§	ß	
F			/	?	O	_	o	¢	¿	È	ë	Ø	ø	¶	•	

Figure B-4.   Character Set and Hex Codes for Text Type Styles

Note: The type style shown is Courier 10. Other text type styles contain the same characters. Hex codes 00 through 09, 0A through 0F, 10 through 19, 1A through 1F, AB, EF, and FF are control codes that cannot be printed. Hex code 20 is a space.

HEX CODES AND CHARACTER SET TABLES   **B-5**

DAISY PRINTERS

This section contains figures illustrating the character position, width, and hammer energy values for the various Wang daisy printers.

Figure B-5 shows the values for the Wang 06 Daisy Print Wheel.

FONT POSITION
CHARACTER
HAMMER ENERGY
UNIT SPACING WIDTH

Figure B-5.   Wang 06 Daisy Print Wheel
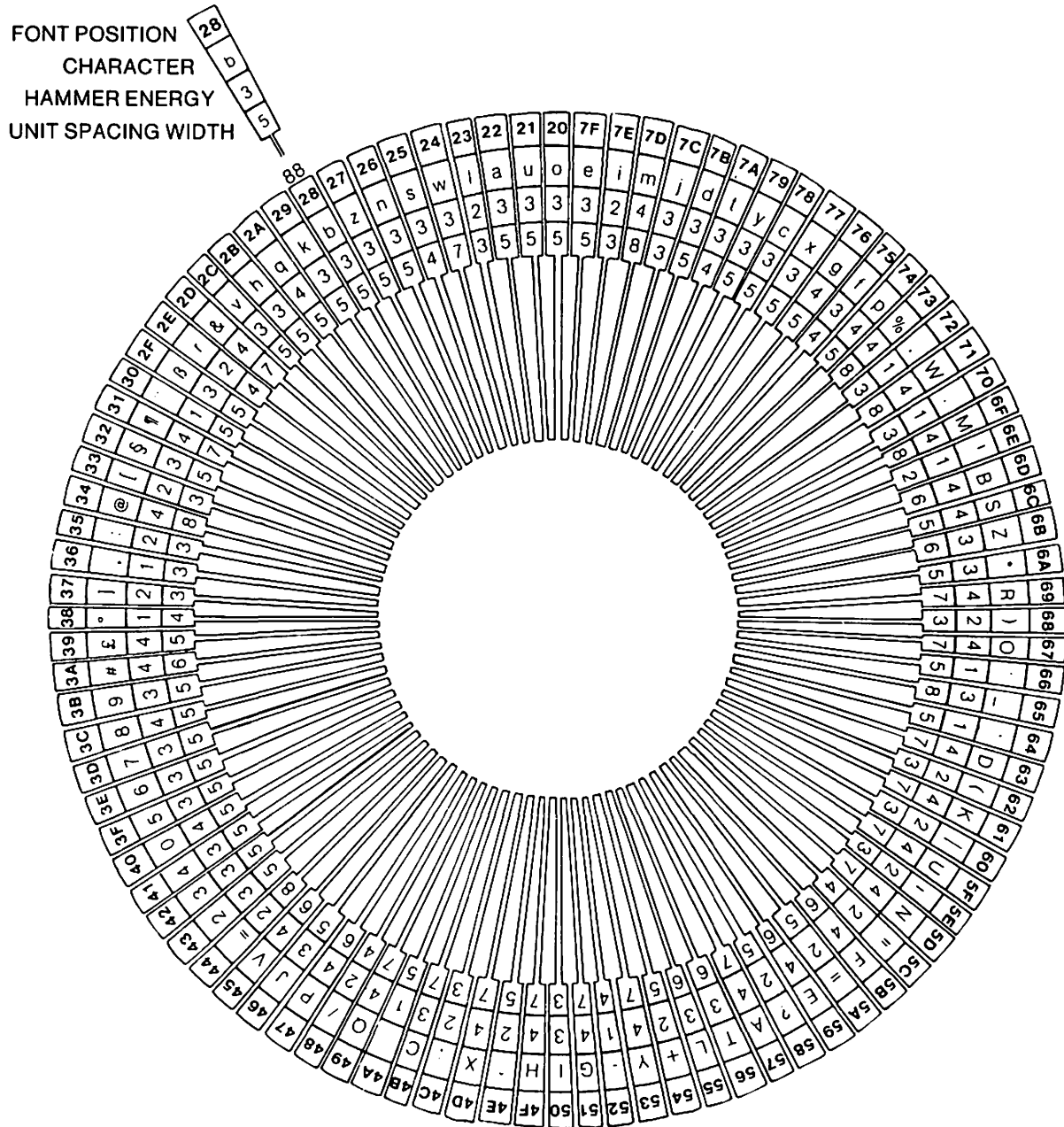
Figure B-6 shows the values for the Wang OCR-A Daisy Print Wheel.

FONT POSITION
CHARACTER
HAMMER ENERGY
UNIT SPACING WIDTH
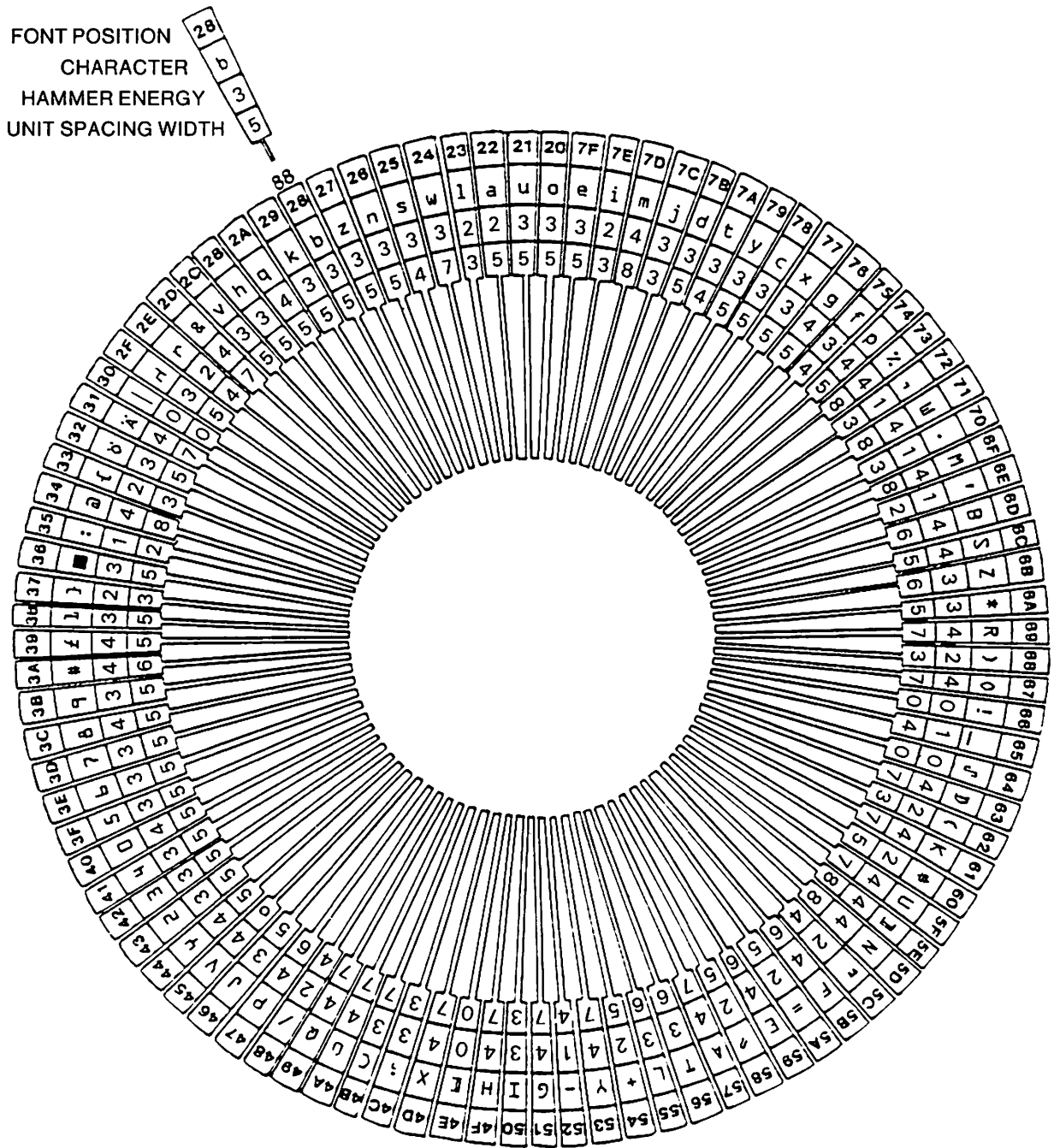
Figure B-6. Wang OCR-A Daisy Print Wheel

Figure B-7 shows the values for Wang OCR-B Daisy Print Wheel.

FONT POSITION 28
CHARACTER b
HAMMER ENERGY 3
UNIT SPACING WIDTH 5
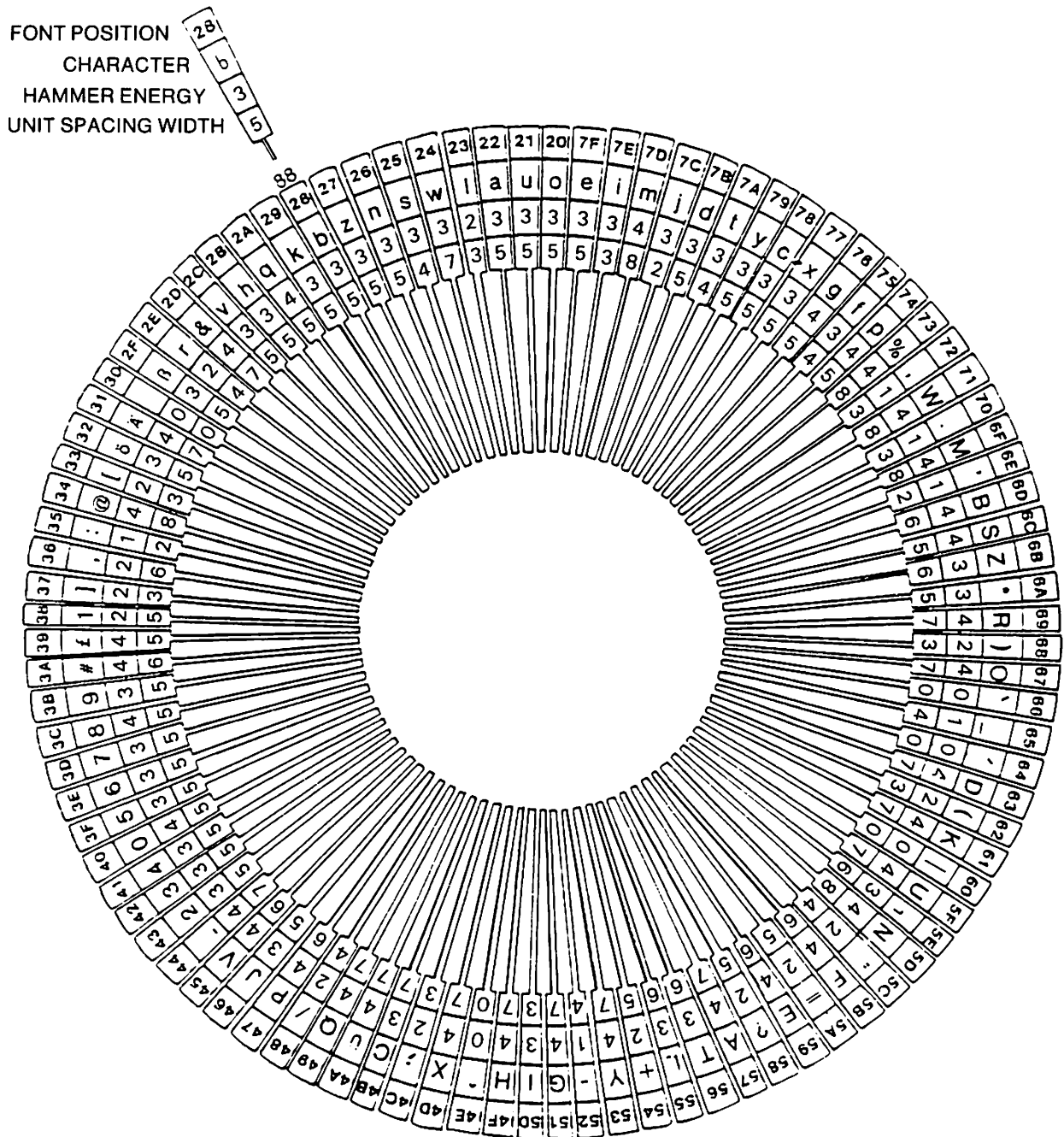
Figure B-7. Wang OCR-B Daisy Print Wheel

Figure B-8 shows the values for Wang 08 Modified Scientific Daisy Print Wheel.
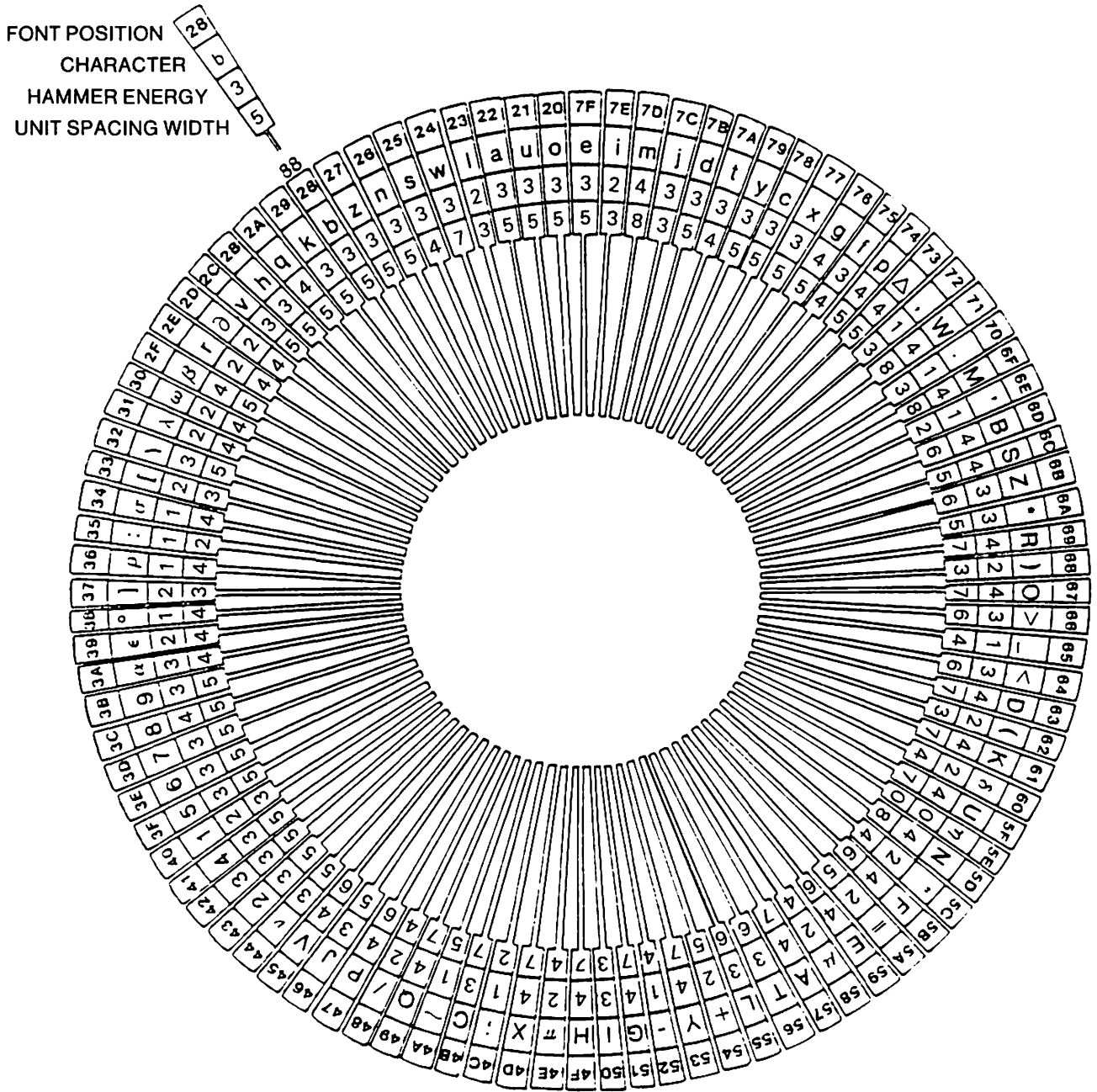
Figure B-8.   Wang 08 Modified Scientific Daisy Print Wheel

Figure B-9 shows the values for the Wang Full Scientific 10/12 Daisy Print Wheel.

FONT POSITION
CHARACTER
HAMMER ENERGY
UNIT SPACING WIDTH
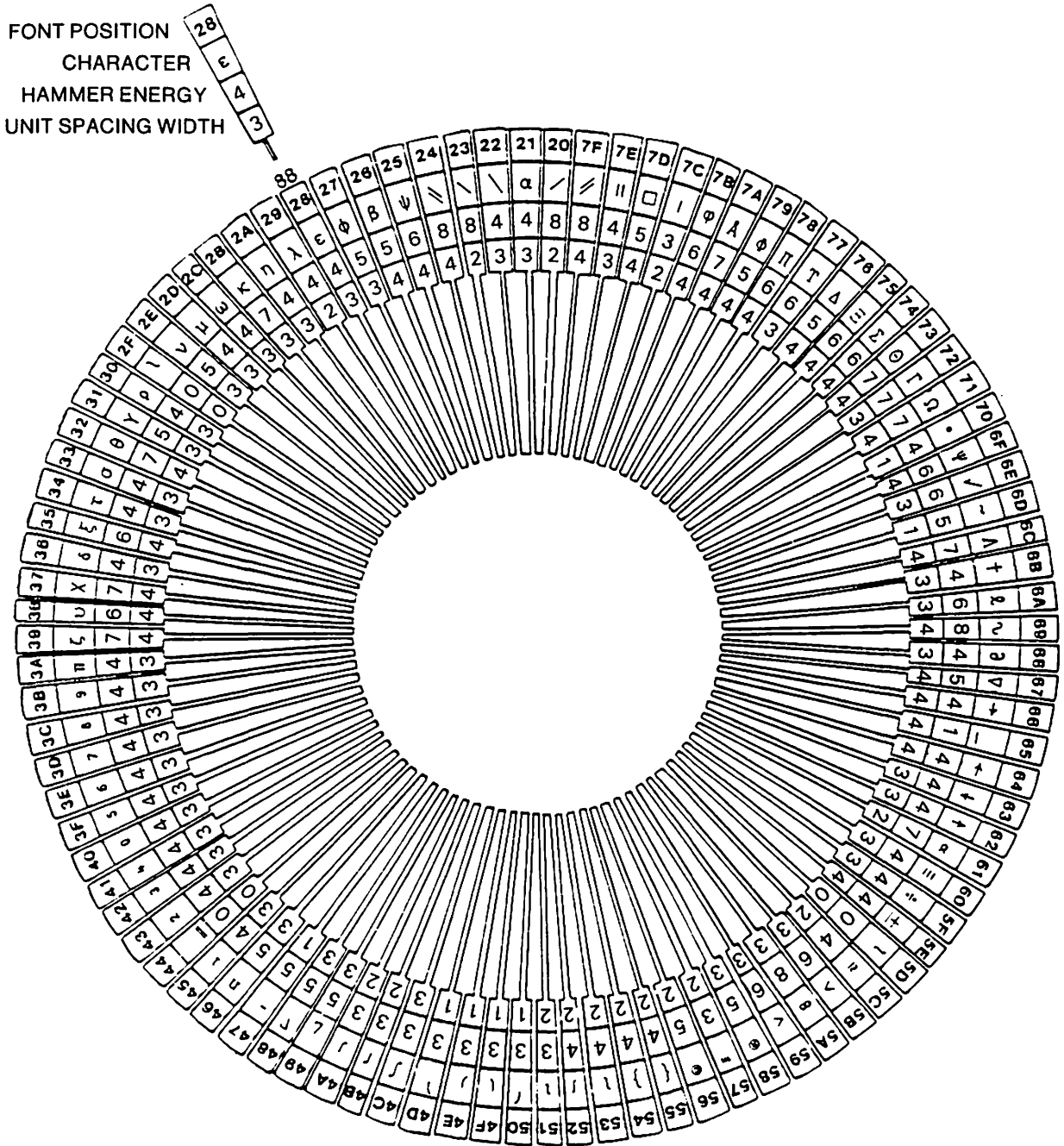
Figure B-9. Wang Full Scientific 10/12 Daisy Print Wheel

Figure B-10 shows the values for the Wang OCR A-10 Daisy Print Wheel.

Figure B-10. Wang OCR A-10 Daisy Print Wheel

Figure B-11 shows the values for the Wang ASCII Print Wheel.
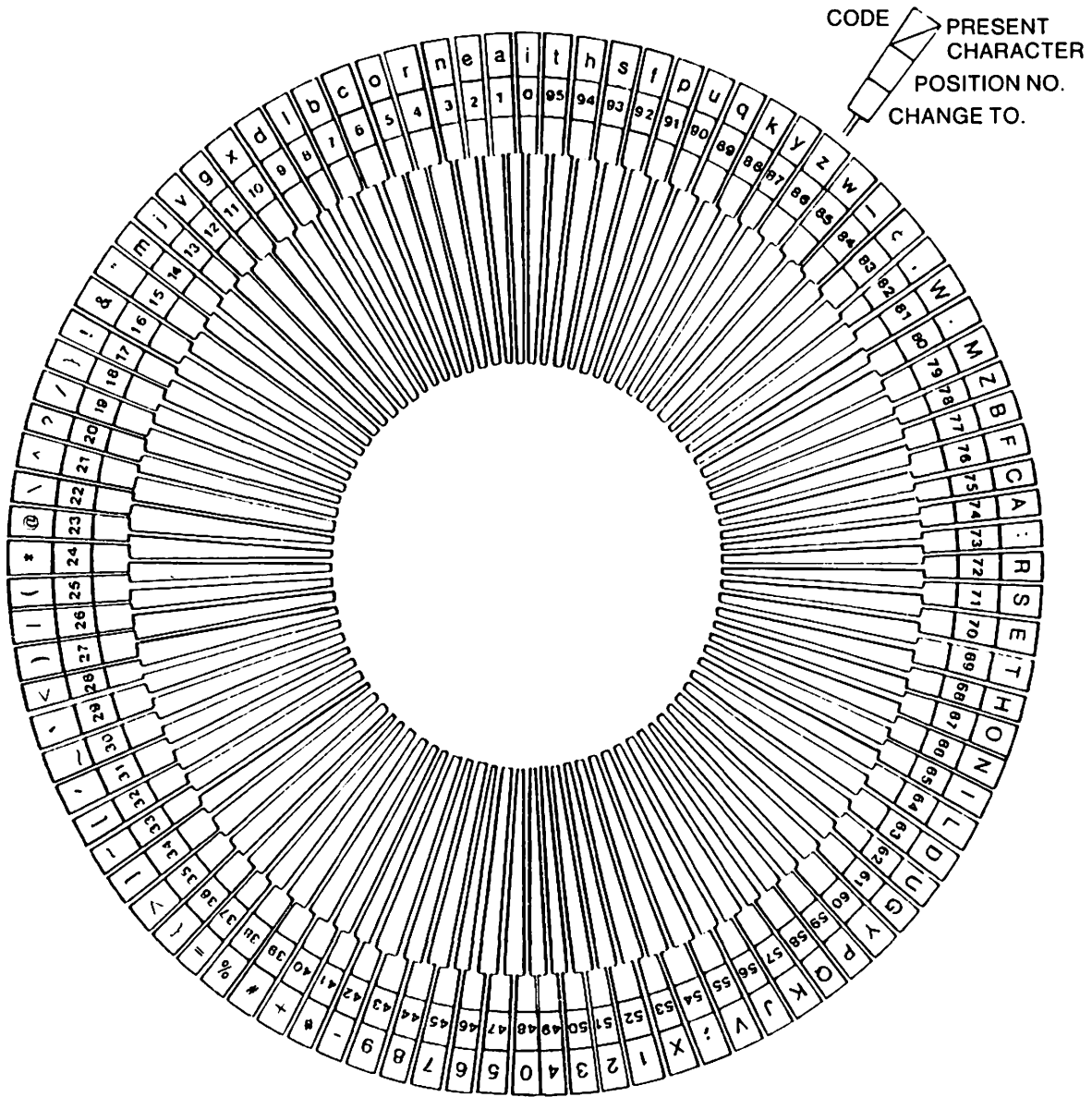
Figure B-11.   Wang ASCII Print Wheel

CHARACTER SETS FOR LASERJET PRINTERS

Tables B-12 through B-17 contain the character sets for fonts available on the LaserJet.

To find the two-digit hex code for a character, first locate the printer character in the body of the table. The first digit is located at the top of the column; the second digit is located at the left of the row. For example, the hex code for the character A is 41.

Figure B-12 shows the WISCII I character set for the Courier Regular Standard font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p		Â	â			Þ	þ	£
1	!	1	A	Q	a	q		À	à			Ð	ð	f
2	"	2	B	R	b	r		Á	á			Ý	ý	¥
3	#	3	C	S	c	s		Ä	ä	Î	î			¼
4	$	4	D	T	d	t		Ã	ã	Ì	ì			½
5	%	5	E	U	e	u				İ	ı	Û	û	¾
6	&	6	F	V	f	v		Å	å	Ï	ï	Ù	ù	^
7	'	7	G	W	g	w						Ú	ú	˙
8	(	8	H	X	h	x		Æ	æ	Ñ	ñ	Ü	ü	¨
9	)	9	I	Y	i	y		Ç	ç	Ô	ô			¨
A	*	:	J	Z	j	z				Ò	ò		¤	ˉ
B	+	;	K	[	k	{				Ó	ó			
C	,	<	L	\	l	|		Ê	ê	Ö	ö	ª	º	
D	-	=	M	]	m	}	±	È	è	Õ	õ	«	»	
E	.	>	N	^	n	~	¡	É	é			§	ß	
F	/	?	O	_	o	¢	¿	Ë	ë	Ø	ø	¶		·

Figure B-12. WISCII I Courier Regular Standard Font

Figure B-13 shows the WISCII I character set for the Courier Italic Standard font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p	°	Â	â	Ğ	ğ	Þ	þ	£
1	!	1	A	Q	a	q		À	à	IJ	ij	Ð	ð	f
2	"	2	B	R	b	r		Á	á	İ	ı	Ý	ý	¥
3	#	3	C	S	c	s		Ä	ä	Î	î	Ş	ş	¼
4	$	4	D	T	d	t		Ã	ã	Ì	ì	'	'	½
5	%	5	E	U	e	u		←	→	Í	í	Û	û	¾
6	&	6	F	V	f	v		Å	å	Ï	ï	Ù	ù	^
7	'	7	G	W	g	w		↓	†	Ħ	H	Ú	ú	`
8	(	8	H	X	h	x		Æ	æ	Ñ	ñ	Ü	ü	´
9	)	9	I	Y	i	y		Ç	ç	Ô	ô	©	™	¨
A	*	:	J	Z	j	z		‡	□	Ò	ò	®	¤	˜
B	+	;	K	[	k	{		•		Ó	ó	R	↩	¸
C	,	<	L	\	l	|		Ê	ê	Ö	ö	ª	º	˙
D	-	=	M	]	m	}	±	È	è	Õ	õ	«	»	˘
E	.	>	N	↑	n	~	¡	É	é	Œ	œ	§	ß	
F	/	?	O	_	o	¢	¿	Ë	ë	Ø	ø	¶		·

Figure B-13. WISCII I Courier Italic Standard Font

Figure B-14 shows the character set for the Letter Gothic Regular ASCII font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p								
1	!	1	A	Q	a	q								
2	"	2	B	R	b	r								
3	#	3	C	S	c	s								
4	$	4	D	T	d	t								
5	%	5	E	U	e	u								
6	&	6	F	V	f	v								
7	'	7	G	W	g	w								
8	(	8	H	X	h	x								
9	)	9	I	Y	i	y								
A	*	:	J	Z	j	z								
B	+	;	K	[	k	{								
C	,	<	L	\	l	|								
D	-	=	M	]	m	}								
E	.	>	N	^	n	~								
F	/	?	O	_	o									

Figure B-14. Letter Gothic Regular ASCII Font

Figure B-15 shows the WISCII I character set for the Letter Gothic Regular Legal font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	°	p								
1	!	1	A	Q	a	q								
2	"	2	B	R	b	r								
3	#	3	C	S	c	s								
4	$	4	D	T	d	t								
5	%	5	E	U	e	u								
6	&	6	F	V	f	v								
7	'	7	G	W	g	w								
8	(	8	H	X	h	x								
9	)	9	I	Y	i	y								
A	*	:	J	Z	j	z								
B	+	;	K	[	k	§								
C	,	=	L	®	l	¶								
D	-	=	M	]	m	†								
E	.	¢	N	©	n	™								
F	/	?	O	_	o									

Figure B-15. WISCII I Letter Gothic Regular Legal Font

Figure B-16 shows the WISCII I character set for the Prestige Elite Regular Scientific font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	¶	π	¶	π								
1	√	1	α	γ	α	γ								
2	|	2	β	θ	β	θ								
3	§	3	ψ	σ	ψ	σ								
4	∇	4	φ	τ	φ	τ								
5	±	5	ε	ξ	ε	ξ								
6	∝	6	∂	Δ	∂	Δ								
7	⌠	7	λ	δ	λ	δ								
8	÷	8	η	χ	η	χ								
9	≈	9	ι	υ	ι	υ								
A	Π	Ω	Θ	ζ	Θ	ζ								
B	Γ	Λ	κ	↑	κ	↑								
C	Ψ	∞	ω	→	ω	→								
D	≡	∫	μ	T	μ	T								
E	Φ	†	ν	←	ν	←								
F	Ξ	Σ	ρ	_	ρ									

Figure B-16.   WISCII I Prestige Elite Regular Scientific Font

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Figure B-17 shows the WISCII I character set for the Prestige Elite Regular Full Scientific font.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	∴	Π	∵	π				¯	⊕	Å	⌈	⌉
1	√	1	A	P	α	ρ			↑	∀	⊙	⊣	⌊	⌋
2	″	2	B	Σ	β	σ			→	∃	⊗	⊢	⌈	⌉
3	°	3	Γ	T	γ	τ			↓	⊤	⊖		{	}
4	∞	4	Δ	T	δ	υ			←	⊥	⊘		⌊	⌋
5	÷	5	E	Φ	ε	φ			⇑	∪	∧	∫	⌈	∣
6	∝	6	Z	X	ς	χ			⇒	∩	∨	∮	φ	∣
7	′	7	H	Ψ	η	ψ			⇓	∈	⋁	∠	⌋	⌟
8	(	8	Θ	Ω	θ	ω			⇐	∍	¬	ø	⌜	⌐
9	)	9	I	∇	ι	ϑ			↕	∉	∘	ℵ	‖	⟩
A	×	e	K	∂	κ	φ			↔	⊂	·	⊐	∠	⌐
B	+	ε	Λ	ς	λ	ϖ			⇕	⊃	•	⊐	/	\
C	,	<	M	≤	μ	≈			⇔	⊄	●	ℭ		
D	−	=	N	≠	ν	≡			⇌	Ð	○	ℑ		∓
E	.	>	Ξ	≥	ξ	≠			≂	⊆	†	ℜ		±
F	/	≈	O	_	ο	▓			¯	⊇	‡	3		

Figure B-17. WISCII I Prestige Elite Regular Full Scientific Font

The application you use determines which encoding a font uses. WP Plus and WP use the WISCII encoding of the PostScript fonts. A third-party software package may let you use either Adobe Standard encoding or WISCII encoding. The WISCII-encoded fonts have the letter, W, in front of their names. For example, WCourier.

Adobe and WISCII Encodings

The Symbols Set and ITC Zapf Dingbats fonts each have their own unique Adobe encoding. The Inline Set uses a unique WISCII encoding (WISCII-2). The WISCII encoding of the other PostScript fonts uses the United States and Western Europe character set (WISCII-1). The different encodings of the PostScript fonts are shown in Figures B-18 through B-24.

To find the two-digit hex code for a character, first locate the printer character in the body of the figure. The first digit is located at the top of the column; the second digit is located at the left of the row. For example, the hex code for the character A is 41.

In Adobe Standard encoding, shown in Figure B-18, character codes are not assigned to ligatures, accented characters, and certain symbols. Refer to the *PostScript Language Reference Manual* for a list of the coded and uncoded characters.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	'	p						—		
1	!	1	A	Q	a	q			¡	–	`		Æ	æ
2	"	2	B	R	b	r			¢	†	´			
3	#	3	C	S	c	s			£	‡	^		ª	
4	$	4	D	T	d	t			/	·	˜			
5	%	5	E	U	e	u			¥	–				ı
6	&	6	F	V	f	v			ƒ	¶	˘			
7	'	7	G	W	g	w			§	•	˙			
8	(	8	H	X	h	x			¤	‚	¨		Ł	ł
9	)	9	I	Y	i	y			'	„			Ø	ø
A	*	:	J	Z	j	z			"	"	°		Œ	œ
B	+	;	K	[	k	{			«	»	¸		º	ß
C	,	<	L	\	l	|			‹	…				
D	-	=	M	]	m	}			›	‰	˝			
E	.	>	N	^	n	~			fi		˛			
F	/	?	O	_	o				fl	¿	ˇ			

Figure B-18.   Adobe Standard Encoding

If you are using a third-party software package, the actual font names for the Adobe Standard encoding shown in Figure B-18 are as follows:

- Courier
- Courier-Bold
- Courier-Italic
- Courier-BoldItalic
- Times-Roman
- Times-Bold
- Times-Italic
- Times-BoldItalic
- Helvetica
- Helvetica-Bold
- Helvetica-Oblique
- Helvetica-BoldOblique
- Helvetica-Narrow
- Helvetica-Narrow-Bold
- Helvetica-Narrow-Oblique
- Helvetica-Narrow-BoldOblique
- AvantGarde-Book
- AvantGarde-Demi
- AvantGarde-BookOblique
- AvantGarde-DemiOblique
- NewCenturySchlbk-Roman
- NewCenturySchlbk-Bold
- NewCenturySchlbk-Italic
- NewCenturySchlbk-Bold Italic
- Palatino-Roman
- Palatino-Bold
- Palatino-Italic
- Palatino-BoldItalic
- ZapfChancery-MediumItalic

The unique Adobe encoding of the Symbols Set font is shown in Figure B-19.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	≡	Π	‾	π				°	ℵ	∠	◊	
1	!	1	A	Θ	α	θ			Υ	±	ℑ	∇	⟨	⟩
2	∀	2	B	P	β	ρ			′	″	ℜ	®	®	∫
3	#	3	X	Σ	χ	σ			≤	≥	℘	©	©	⌠
4	∃	4	Δ	T	δ	τ			/	×	⊗	TM	TM	|
5	%	5	E	Y	ε	υ			∞	∝	⊕	Π	Σ	⌡
6	&	6	Φ	ς	φ	ϖ			ƒ	∂	∅	√	⎛	⎞
7	∋	7	Γ	Ω	γ	ω			♣	•	∩	·	|	|
8	(	8	H	Ξ	η	ξ			♦	÷	∪	¬	⎝	⎠
9	)	9	I	Ψ	ι	ψ			♥	≠	⊃	∧	⌈	⌉
A	*	:	ϑ	Z	φ	ζ			♠	≡	⊇	∨	|	|
B	+	;	K	[	κ	{			↔	≈	⊄	⇔	⎣	⎦
C	,	<	Λ	∴	λ	|			←	…	⊂	⇐	⎡	⎤
D	–	=	M	]	μ	}			↑	|	⊆	⇑	{	}
E	.	>	N	⊥	ν	~			→	—	∈	⇒	⎜	⎟
F	/	?	O	_	ο				↓	⌐	∉	⇓	|	

Figure B-19.   Adobe Encoding of Symbols Set Font

If you are using a third-party software package, the actual font name is Symbol.

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The unique Adobe encoding of the ITC Zapf Dingbats font is shown in Figure B-20.

Figure B-20.   Adobe Encoding of ITC Zapf Dingbats Font

If you are using a third-party software package, the actual font name is ZapfDingbats.

The WISCII encoding of the Inline font is shown in Figure B-21.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		o	≡	ℓ	ϑ	ρ	°	'	⟨	♂	♀	P	⊂	∈
1	√	1	∇	Γ	α	γ		⌈	⟩	♌	A	⊗	⊃	∈
2	•	2	n	⊙	φ	θ		∣	;	♍	B	≚	∩	¢
3	←	3	Ψ	Σ	ψ	σ		⌊	?	♋	⇐	⇒	U	¾
4	→	4	Φ	™	φ	τ		⌉	=	⅓	↔	T	∧	½
5	±	5	÷	Ξ	ε	ξ		⌋	‡	⅔	E	⋯	V	¾
6	Σ	6	□	∝	↔	†		♈	¶	★	◇	⌢	C	℗
7	⌈	7	Λ	Δ	λ	δ		♏	ℓ	♣	♯	L	¬	~
8	⟩	8	‖	∞	η	χ		⌢	¿	⌡	H	X	Ɐ	¯
9	L	9	}	Υ	ι	υ		⌊	§	Θ	I	√	Ǝ	˘
A	⊚	¯	∫	≃	∫	ζ		\	⊥	◁	▷	Z	↗	·
B	⟍	↕	⁄⁄	Π	κ	«		⟍	∠	O	K	≠	↘	¨
C	◠	˘	Ω	\	ω	»		⟩	⊕	×	⇋	≢	↙	
D	–	⊙	∂	π	μ	≧	≅	⟋	♀	⊙	M	϶	↖	
E	⋯	⌈	~	β	ν	≦	⊹	⊰	≜	●	N	⊢	ℏ	
F	˘	⌋	↑	_	↓	{	≐	≈	‥	∓	O	∴	∵	

Figure B-21. WISCII Encoding of Inline Font

If you are using a third-party software package, the actual font name is Inline.

The WISCII encoding of the Courier, Times, Helvetica, and Helvetica Narrow font families is shown in Figure B-22.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	'	p	°	Â	â	Ğ	ğ	Þ	þ	£
1	!	1	A	Q	a	q		À	à	IJ	ij	Ð	ð	*f*
2	"	2	B	R	b	r		Á	á	İ	ı	Ý	ý	¥
3	#	3	C	S	c	s		Ä	ä	Î	î	Ş	ş	¼
4	$	4	D	T	d	t		Ã	ã	Ì	ì	'	'	½
5	%	5	E	U	e	u		←	→	Í	í	Û	û	¾
6	&	6	F	V	f	v		Å	å	Ï	ï	Ù	ù	^
7	'	7	G	W	g	w		↓	†	L·L	ŀl	Ú	ú	`
8	(	8	H	X	h	x		Æ	æ	Ñ	ñ	Ü	ü	´
9	)	9	I	Y	i	y		Ç	ç	Ô	ô	©	™	¨
A	*	:	J	Z	j	z		‡	□	Ò	ò	®	¤	˜
B	+	;	K	[	k	{		•		Ó	ó	₧	↔	˛
C	,	<	L	\	l	|		Ê	ê	Ö	ö	ª	º	ˇ
D	-	=	M	]	m	}	±	È	è	Ő	ő	«	»	˘
E	.	>	N	^	n	~	¡	É	é	Œ	œ	§	ß	
F	/	?	O	_	o	¢	¿	Ë	ë	Ø	ø	¶	·	

Figure B-22. WISCII Encoding of Courier, Times, Helvetica, and Helvetica Narrow Font Families

If you are using a third party software package, the actual names of the fonts that use the WICSII encoding shown in Figure B-22 are as follows:

- WCourier
- WCourier-Bold
- WCourier-Italic
- WCourier-BoldItalic
- WTimes-Roman
- WTimes-Bold
- WTimes-Italic
- WTimes-BoldItalic
- WHelvetica
- WHelvetica-Bold
- WHelvetica-Oblique
- WHelvetica-BoldOblique

- WHelvetica-Narrow
- WHelvetica-Narrow-Bold
- WHelvetica-Narrow-Oblique
- WHelvetica-Narrow-BoldOblique

The WISCII encoding of the ITC Avant Garde Gothic and New Century Schoolbook font families is shown in Figure B-23.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	`	p	°	Â	â			Þ	þ	£
1	!	1	A	Q	a	q		À	à			Ð	ð	ƒ
2	"	2	B	R	b	r		Á	á		ı	Ý	ý	¥
3	#	3	C	S	c	s		Ã	ã	Î	î			¼
4	$	4	D	T	d	t		Ä	ä	Ì	ì	`	´	½
5	%	5	E	U	e	u				Í	í	Û	û	¾
6	&	6	F	V	f	v		Å	å	Ï	ï	Ù	ù	^
7	'	7	G	W	g	w			†			Ú	ú	ˋ
8	(	8	H	X	h	x		Æ	œ	Ñ	ñ	Ü	ü	´
9	)	9	I	Y	i	y		Ç	ç	Ô	ô	©	™	¨
A	*	:	J	Z	j	z		‡		Ò	ò	®	◻	¯
B	+	;	K	(	k	{		•		Ó	ó			˙
C	,	<	L	\	l	|		Ê	ê	Õ	õ	º	º	˘
D	-	=	M	)	m	}	±	È	è	Ō	ō	«	»	˝
E	.	>	N	^	n	~	¦	É	é	Œ	œ	§	ß	
F	/	?	O	_	o	¢	¿	Ë	ë	Ø	ø	¶		·

Figure B-23.   WISCII Encoding of ITC Avant Garde Gothic and
New Century Schoolbook Font Families

If you are using a third-party software package, the actual font names for the WICSII encoding shown in Figure B-23 are as follows:

- WAvantGarde-Book
- WAvantGarde-Demi
- WAvantGarde-BookOblique
- WAvantGarde-DemiOblique
- WNewCenturySchlbk-Roman
- WNewCenturySchlbk-Bold
- WNewCenturySchlbk-Italic
- WNewCenturySchlbk-Bold Italic

The WISCII encoding of the Palatino font family and the ITC Zapf Chancery Medium Italic font is shown in Figure B-24.

	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
0		0	@	P	´	p		Â	â					£
1	!	1	A	Q	a	q		À	à					ƒ
2	"	2	B	R	b	r		Á	á		ı			¥
3	#	3	C	S	c	s		Ä	ä	Î	î			
4	$	4	D	T	d	t		Ã	ã	Ì	ì		´	´
5	%	5	E	U	e	u				Í	í	Û	û	
6	&	6	F	V	f	v		Å	å	Ï	ï	Ù	ù	ˆ
7	´	7	G	W	g	w			†			Ú	ú	`
8	(	8	H	X	h	x		Æ	æ	Ñ	ñ	Ü	ü	´
9	)	9	I	Y	i	y		Ç	ç	Ô	ô	©	TM	¨
A	*	:	J	Z	j	z		‡		Ò	ò	®	▢	~
B	+	;	K	[	k	{		•		Ó	ó			.
C	,	<	L	\	l	|		Ê	ê	Ö	ö	ª	º	ˇ
D	-	=	M	]	m	}		È	è	Õ	õ	«	»	˘
E	.	>	N	^	n	~	¡	É	é	Œ	œ	§	ß	
F	/	?	O	_	o	¢	¿	Ë	ë	Ø	ø	¶	·	

Figure B-24. WISCII Encoding of Palatino Font Family and ITC Zapf Chancery Medium Italic Font

If you are using a third-party software package, the actual font names for the WISCII encoding shown in Figure B-24 are as follows:

- WPalatino-Roman
- WPalatino-Bold
- WPalatino-Italic
- WPalatino-BoldItalic
- ZapfChancery-MediumItalic

Appendix C
PAPER SIZE SPECIFICATIONS

OVERVIEW

This appendix presents the paper size specifications for daisy, matrix, and laser printers with WP and WP Plus. It also contains the specifications for DP paper sizes.

DAISY AND MATRIX PRINTER PAPER SIZE SPECIFICATIONS

The following tables can help you to determine the correct number of lines that can be printed on different paper sizes at 6 and 8 lines per inch, the paper length menu entry, and the number of characters per line in 10-, 12-, and 15-pitch typewriter fonts for daisy and matrix printers.

Daisy and Matrix Lines Per Page

Table C-1 lists the number of lines that can be printed in 6 or 8 lines per inch with single line spacing and the corresponding paper length menu entry for specific paper sizes used on daisy and matrix printers.

Table C-1. Daisy and Matrix Printer Lines Per Page

Paper Size[a]		Paper Length Menu Entry	Number of lines Printed per Page	
(inches)	(MM)		6 LPI	8 LPI
7.25 x 10.50	184 x 267	64	63	84
8.00 x 10.50	203 x 267	63	63	84
8.27 x 11.69	210 x 297	70	70	93
8.50 x 11.00	216 x 279	66	66	88
8.50 x 13.00	216 x 330	78	78	104
8.50 x 14.00	216 x 356	84	84	112
11.00 x 8.50	279 x 216	51	51	68
11.69 x 8.27	297 x 210	50	50	66
4.125 x 9.5	(envelope #10)	10	24	33
3.875 x 8.875	(envelope #9)	9	23	31
Envelope #C5 or any entry less than 36	162 x 229	5	38	50

[a]Note that if your paper size is not listed in this appendix, refer to the next larger paper size listed and enter its menu entry on the Print menu.

Daisy and Matrix Characters Per Line

Table C-2 lists the number of characters that print per line for daisy and matrix printers using 10-, 12-, and 15-pitch typewriter fonts.

Table C-2. Daisy and Matrix Printers Characters Per Line

Paper Width	Number of Characters per Line[a]		
	10 Pitch	12 Pitch	15 Pitch
7.20 in. (182 mm)	72	86	108
7.25 in. (184 mm)	72	87	108
8.00 in. (203 mm)	80	96	120
8.27 in. (210 mm)	82	99	124
8.50 in. (215 mm)	85	102	127
10.00 in. (254 mm)	100	120	150
10.10 in. (257 mm)	101	121	151
10.50 in. (267 mm)	105	126	157
10.83 in. (275 mm)	108	129	162
11.00 in. (280 mm)	110	132	165
11.69 in. (297 mm)	116	140	175
12.40 in. (315 mm)	124	148	186
13.00 in. (330 mm)	130	156	195
14.00 in. (356 mm)	132	158	198

[a]These measurements are based on a 0 margin width.

LASER PRINTER PAPER SIZE SPECIFICATIONS

The following tables can help you determine the correct number of lines that can be printed on different paper sizes in 6 and 8 lines per inch, the paper length menu entry, and the number of characters per line in 10-, 12-, and 15-pitch typewriter fonts for laser printers.

Also, for the LCS15 and LDP8, there are tables for 6-, 12-, 18-, 24-, and 36-point size typographic fonts.

Laser Printer Lines Per Page

Table C-3 lists the number of lines that can be printed in 6 or 8 lines per inch with single line spacing and the paper length menu entry for LIS-12/24, LPS8, and LPS12 laser printers.

Table C-3. Laser Printer Lines per Page

Paper Size		Page Length Entry	Number of Lines Printed per Page			
			Portrait		Landscape	
(inches)	(MM)		6 LPI	8 LPI	6 LPI	8 LPI
7.20 x 10.10	182 x 257	60	58	78	40	53
7.25 x 10.50	184 x 267	64	61	81	40	54
8.00 x 10.00	203 x 254	58	58	77	45	60
8.00 x 10.50	203 x 267	63	61	81	45	60
8.00 x 13.00	203 x 330	77	76	101	45	60
8.27 x 11.69	210 x 297	72	68	90	46[a]	62[b]
8.27 x 13.00	210 x 330	79	76	101	46	62
8.50 x 10.83	215 x 275	65	63	84	48	64
8.50 x 11.00	215 x 280	66	64	85	48	64
8.50 x 12.40	215 x 315	74	72	96	48	64
8.50 x 13.00	215 x 330	78[c]	76	101	48	64
8.50 x 14.00	215 x 356	84	81[d]	109[e]	48	64
11.69 x 16.53	280 x 430[f]	99	96	133	64	85
11.00 x 17.00	297 x 420[f]	99	96	127	68	90

[a] Printable lines per page for LPS-12 is 48.

[b] Printable lines per page for LIS-12/24 and LPS-8 is 61, for LPS-12 is 64.

[c] Page length entry for LPS-12 is 76.

[d] Printable lines per page for LPS-12 is 82.

[e] Printable lines per page for LIS-12/24 and LPS-8 is 108.

[f] For LIS-24 only, to print in Portrait mode, select Landscape font; to print in Landscape mode, select Portrait font. (F301020)

Tables C-4 and C-5 list the number of lines that can be printed in 6 or 8 lines per inch with single line spacing and the page length menu entry for LCS15 and LDP8 printers.

Table C-4.   LCS15 Printable Lines per Page for Typewriter Fonts

Paper Size		Page Length Entry	Number of Lines Printed per Page			
			Portrait		Landscape	
(inches)	(MM)		6 LPI	8 LPI	6 LPI	8 LPI
8.00 x 10.00	203 x 254	58	57	76	45	60
8.00 x 10.50	203 x 267	63	60	80	45	60
8.50 x 11.00	216 x 279	66	64	85	48	63
8.27 x 11.69	210 x 297	72	67	89	46	62
8.50 x 12.40	216 x 315	74	71	95	48	64
8.00 x 13.00	203 x 330	77	75	100	45	60
8.50 x 13.00	216 x 330	78	75	100	48	63
8.27 x 13.00	210 x 330	79	75	100	46	62
8.50 x 14.00	216 x 356	84	81	108	48	63

Table C-5.   LDP8 Printable Lines per Page for Typewriter Fonts

Paper Size		Page Length Entry	Number of Lines Printed per Page			
			Portrait		Landscape	
(inches)	(MM)		6 LPI	8 LPI	6 LPI	8 LPI
4.125 x 9.5	(# 5)	10	n/a	n/a	21	29
3.875 x 8.875	(# 9)	9	n/a	n/a	20	27
# C5	162 x 229	5	n/a	n/a	35	46
7.20 x 10.10	182 x 257[a]	60	57	77	40	53
7.25 x 10.50	184 x 267[a]	64	60	80	40	54
8.00 x 10.00	203 x 254[a]	58	57	76	45	60
8.00 x 10.50	203 x 267[a]	60	63	80	45	60
8.50 x 10.83	216 x 275[b]	65	63	82	48	64
8.50 x 11.00	216 x 279[a]	66	63	84	47	63
8.27 x 11.69	210 x 297	72	70	89	46	61
8.50 x 12.40	216 x 315[c]	74	71	95	48	64
8.00 x 13.00	203 x 330[c]	77	75	100	45	60
8.50 x 13.00	216 x 330[c]	78	75	100	47	63
8.27 x 13.00	210 x 330[c]	79	75	100	46	62
8.50 x 14.00	216 x 356[c]	84	81	108	47	63

[a]These widths print as Executive.

[b]These widths print as Standard.

[c]These widths print as Legal.

Note: Envelopes and paper sizes, 7.20 x 10.10, and 7.25 x 10.50, print on the LDP8 only.

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Table C-6 lists the printable lines per page using 6-, 12-, 18-, 24-, and 36-point size typographic fonts for LCS15 and LDP8 printers

Note: The printable lines per page given in Table C-6 assume the same point-size text throughout the page.

Table C-6. LCS15 and LDP8 Printable Lines Per Page for Typographic Fonts

Portrait Orientation					
Paper Size (Inches)	**6 Pt[a]**	**12 Pt**	**18 Pt**	**24 Pt[a]**	**36 Pt[a]**
7.20[b] x 10.10	n/a	58	38	n/a	n/a
7.25[b] x 10.50	n/a	61	40	n/a	n/a
8.00[b] x 10.00	116	58	38	28	19
8.00[b] x 10.50	122	61	40	30	20
8.50[c] x 10.83	126	64	42	31	21
8.50[c] x 11.00	128	64	42	31	21
8.27 x 11.69	136	68	44	33	22
8.50 x 12.40[d]	144	72	47	35	23
8.00 x 13.00[d]	152	76	50	37	25
8.50 x 13.00[d]	152	76	50	37	25
8.27 x 13.00[d]	152	76	50	37	25
8.50 x 14.00[d]	164	82	54	40	27
4.125 x 9.5	n/a	22	15	n/a	n/a
3.875 x8.875	n/a	20	13	n/a	n/a
162 x 229 mm	n/a	36	23	n/a	n/a
Landscape Orientation					
7.20 x 10.10[b]	n/a	41	26	n/a	n/a
7.25 x 10.50[b]	n/a	41	27	n/a	n/a
8.00 x 10.00[b]	92	46	31	22	15
8.00 x 10.50[b]	92	46	31	22	15
8.50 x 10.83[c]	91	48	31	23	15
8.50 x 11.00[b]	96	48	31	24	16
8.27 x 11.69	93	46	31	23	15
8.50 x 12.40[d]	96	48	31	23	16
8.00 x 13.00[d]	92	46	31	22	15
8.50 x 13.00[d]	96	48	31	24	16
8.27 x 13.00[d]	94	47	31	23	15
8.50 x 14.00[b]	96	48	31	24	16

[a]These point sizes available on PostScript only.
[b]This size prints as Executive.
[c]This size prints as Standard.
[d]This size prints as Legal.

Note: Envelopes and paper sizes, 7.20 x 10.10, and 7.25 x 10.50, print on the LDP8 only.

Laser Printer Characters Per Line for Typewriter Fonts

Tables C-7 through C-10 list the number of characters that print per line when you are using a 10-, 12-, and 15-pitch typewriter font on laser printers.

Table C-7.   LPS-12 Paper Widths for Laser Printers

Paper Width	Number of Characters per Line[a]		
	10 Pitch	12 Pitch	15 Pitch
7.20 in. (182 mm)	67	80	100
7.25 in. (184 mm)	67	81	101
8.00 in. (203 mm)	75	90	112
8.27 in. (210 mm)	77	93	116
8.50 in. (215 mm)	80	96	120
10.00 in. (254 mm)	96	116	145
10.10 in. (257 mm)	97	117	146
10.50 in. (267 mm)	101	122	152
10.83 in. (275 mm)	105	126	157
11.00 in. (280 mm)	106	128	160
11.69 in. (297 mm)	113	136	170
12.40 in. (315 mm)	120	144	181
13.00 in. (330 mm)	126	152	190
14.00 in. (356 mm)	136	164	205

[a]These measurements are based on a 0 margin width.

Table C-8.   LPS8 Characters per Line

Paper Width	Number of Characters per Line[a]		
	10 Pitch	12 Pitch	15 Pitch
7.20 in. (182 mm)	67	80	100
7.25 in. (184 mm)	67	81	101
8.00 in. (203 mm)	75	90	112
8.27 in. (210 mm)	78	94	117
8.50 in. (215 mm)	80	96	121
10.00 in. (254 mm)	96	116	145
10.10 in. (257 mm)	97	117	146
10.50 in. (267 mm)	101	122	152
10.83 in. (275 mm)	105	126	157
11.00 in. (280 mm)	107	128	160
11.69 in. (297 mm)	114	136	171
12.40 in. (315 mm)	120	144	181
13.00 in. (330 mm)	126	152	190
14.00 in. (356 mm)	136	163	204

[a]These measurements are based on a 0 margin width.

Table C-9. LIS-12/24 Characters per Line

Paper Width	Number of Characters per Line[a]		
	10 Pitch	12 Pitch	15 Pitch
7.20 in. (182 mm)	67	80	100
7.25 in. (184 mm)	67	81	101
8.00 in. (203 mm)	75	90	112
8.27 in. (210 mm)	78	94	117
8.50 in. (215 mm)	80	96	121
10.00 in. (254 mm)	96	116	145
10.10 in. (257 mm)	97	117	146
10.50 in. (267 mm)	101	122	152
10.83 in. (275 mm)	105	126	157
11.00 in. (280 mm)	107	127	159
11.69 in. (297 mm)	112	135	168
12.40 in. (315 mm)	120	144	181
13.00 in. (330 mm)	126	152	190
14.00 in. (356 mm)	136	163	203
17.00 in. (430 mm)	165	198	247
16.53 in. (420 mm)	160	192	240

[a]These measurements are based on a 0 margin width.

Table C-10. LCS15 and LDP8 Characters per Line (Typewriter Fonts)

Paper Size (Inches)	Paper Size (Millimeters)	Portrait			Landscape		
		10 p[a]	12 p	15 p	10 p	12 p	15 p
4.125 x 9.5	(#10)	n/a	n/a	n/a	36	43	54
3.875 x 8.875	(#9)	n/a	n/a	n/a	33	40	50
#C5	162 x 229	n/a	n/a	n/a	58	70	88
7.20 x 10.10[b]	182 x 257	67	80	100	97	117	146
7.25 x 10.50[b]	184 x 267	67	83	100	101	121	150
8.00 x 10.00[b]	203 x 254	75	90	112	96	115	143
8.00 x 10.50[b]	203 x 267	75	90	112	101	121	150
8.50 x 10.83[c]	216 x 275	80	96	120	105	126	157
8.50 x 11.00[b]	216 x 279	80	96	120	106	128/127	159/158
8.27 x 11.69	210 x 297	77	93	116	112	135	168
8.50 x 12.40[d]	216 x 315	80	96	120	120	144	179
8.00 x 13.00[d]	203 x 330	75	90	112	126	151	188
8.50 x 13.00[d]	216 x 330	80	96	120	126	151	188
8.27 x 13.00[d]	210 x 330	77	93	116	126	151	188
8.50 x 14.00[d]	216 x 356	80	96	120	136	163	205/203

[a] Pitch.
[b]This size prints as Executive.
[c]This size prints as Standard.
[d]This size prints as Legal.

Note: When two numbers are listed in the table, the first number is for the LCS15 and the second number is for the LDP8.

VS DP SHEET FEEDER PAPER SIZE SPECIFICATIONS

The following tables present the DP paper size specifications for the Ziyad, DSF-60, and Laser sheet feeders.

The VFU specifications are used, when running the FORMCNTL utility, for the length of form and vertical spacing values.

Ziyad Sheet Feeder Specifications

Twin-sheet feeders and bins have the following number designation: the upper bin is bin 2 and the lower twin bin is bin 1.

Twin-sheet feeders, supported by older Wang daisy wheel printers and the 5577 matrix printer, hold one paper size: 8.5 x 11 inches.

Dual-sheet feeders, supported by 5577 matrix and the DW/55 daisy wheel printer, hold paper of various dimensions. Each bin in a pair holds paper of the same dimension; however, the paper in bin 2 may be fed broadside (for landscape printing).

Ziyad Sheet Feeder Form Length Specifications

Table C-11 contains the form length specifications for Ziyad sheet feeder paper sizes.

Table C-11. Ziyad Sheet Feeder Paper Size Specifications

VFU Length Specified	Paper Size Bin #1	Actual Lines on Page	Paper Size Bin #2	Actual Lines on Page
24 @ 3 pitch	210 x 297 mm	34	297 x 210 mm	24
33 @ 4 pitch	210 x 297 mm	46	297 x 210 mm	32
50 @ 6 pitch	210 x 297 mm	69	297 x 210 mm	49
66 @ 8 pitch	210 x 297 mm	92	297 x 210 mm	65
25 @ 3 pitch	8.5 x 11 in.	32	11 x 8.5 in.	25
34 @ 4 pitch	8.5 x 11 in.	43	11 x 8.5 in.	33
51 @ 6 pitch	8.5 x 11 in.	65	11 x 8.5 in.	50
68 @ 8 pitch	8.5 x 11 in.	86	11 x 8.5 in.	66
31 @ 3 pitch	8 x 10.5 in.	31	8 x 10.5 in.	31
42 @ 4 pitch	8 x 10.5 in.	41	8 x 10.5 in.	41
63 @ 6 pitch	8 x 10.5 in.	62	8 x 10.5 in.	62
84 @ 8 pitch	8 x 10.5 in.	82	8 x 10.5 in.	82
32 @ 3 pitch	7.25 x 10.5 in.	31	7.25 x 10.5 in.	31
43 @ 4 pitch	7.25 x 10.5 in.	41	7.25 x 10.5 in.	41
64 @ 6 pitch	7.25 x 10.5 in.	62	7.25 x 10.5 in.	62
85 @ 8 pitch	7.25 x 10.5 in.	82	7.25 x 10.5 in.	82
33 @ 3 pitch	8.5 x 11 in.	32	8.5 x 11 in.	32
44 @ 4 pitch	8.5 x 11 in.	43	8.5 x 11 in.	43
66 @ 6 pitch	8.5 x 11 in.	65	8.5 x 11 in.	65
88 @ 8 pitch	8.5 x 11 in.	86	8.5 x 11 in.	86

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Table C-11. Ziyad Sheet Feeder Paper Size Specifications (continued)

VFU Length Specified	Paper Size Bin #1	Actual Lines on Page	Paper Size Bin #2	Actual Lines on Page
35 @ 3 pitch	210 x 297 mm	34	210 x 297 mm	34
46 @ 4 pitch	210 x 297 mm	46	210 x 297 mm	46
70 @ 6 pitch	210 x 297 mm	69	210 x 297 mm	69
72 @ 6 pitch	210 x 297 mm	69	210 x 297 mm	69
93 @ 8 pitch	210 x 297 mm	92	210 x 297 mm	92
39 @ 3 pitch	8.5 x 13 in.	38	8.5 x 13 in.	38
52 @ 4 pitch	8.5 x 13 in.	51	8.5 x 13 in.	51
78 @ 6 pitch	8.5 x 13 in.	77	8.5 x 13 in.	77
104 @ 8 pitch	8.5 x 13 in.	102	8.5 x 13 in.	102
42 @ 3 pitch	8.5 x 14 in.	41	8.5 x 14 in.	41
56 @ 4 pitch	8.5 x 14 in.	55	8.5 x 14 in.	55
84 @ 6 pitch	8.5 x 14 in.	83	8.5 x 14 in.	83
112 @ 8 pitch	8.5 x 14 in.	110	8.5 x 14 in.	110

Zyiad Sheet Feeder Printable Widths

Table C-12 lists the number of characters that print per line for DP printing using the Zyiad sheet feeder at 10-, 12-, and 15-pitch typewriter fonts.

Table C-12. Zyiad Sheet Feeder Printable Widths

Paper Width	Number of Characters per Line		
	10 Pitch	12 Pitch	15 Pitch
Continuous feed	132 max	158 max	198 max
7.25 in. (184 mm)	71	85	106
8.00 in. (203 mm)	79	94	118
8.27 in. (210 mm)	81	97	121
8.50 in. (215 mm)	83	99	124
11.00 in. (280 mm)	108	129	162
11.69 in. (297 mm)	114	137	172

DSF-60 Form Length Specifications

Table C-13 contains the form length specifications for DSF-60 paper sizes.

Table C-13. DSF-60 Paper Size Specifications

VFU Length Specified	Paper Size Bin #1	Actual Lines on Page	Paper Size Bin #2	Actual Lines on Page
24 @ 3 pitch	210 x 297 mm	35	297 x 210 mm	24
33 @ 4 pitch	210 x 297 mm	46	297 x 210 mm	32
50 @ 6 pitch	210 x 297 mm	69	297 x 210 mm	48
66 @ 8 pitch	210 x 297 mm	91	297 x 210 mm	64
25 @ 3 pitch	8.5 x 11 in.	32	11 x 8.5 in.	25
34 @ 4 pitch	8.5 x 11 in.	43	11 x 8.5 in.	33
51 @ 6 pitch	8.5 x 11 in.	64	11 x 8.5 in.	50
68 @ 8 pitch	8.5 x 11 in.	86	11 x 8.5 in.	66
32 @ 3 pitch	7.25 x 10.5 in.	31	7.25 x 10.5 in.	31
43 @ 4 pitch	7.25 x 10.5 in.	41	7.25 x 10.5 in.	41
64 @ 6 pitch	7.25 x 10.5 in.	62	7.25 x 10.5 in.	62
85 @ 8 pitch	7.25 x 10.5 in.	82	7.25 x 10.5 in.	82
33 @ 3 pitch	8.5 x 11 in.	32	8.5 x 11 in.	32
44 @ 4 pitch	8.5 x 11 in.	43	8.5 x 11 in.	43
66 @ 6 pitch	8.5 x 11 in.	64	8.5 x 11 in.	64
88 @ 8 pitch	8.5 x 11 in.	86	8.5 x 11 in.	86
35 @ 3 pitch	210 x 297 mm	35	210 x 297 mm	35
46 @ 4 pitch	210 x 297 mm	46	210 x 297 mm	46
70 @ 6 pitch	210 x 297 mm	69	210 x 297 mm	69
72 @ 6 pitch	210 x 297 mm	69	210 x 297 mm	69
93 @ 8 pitch	210 x 297 mm	91	210 x 297 mm	91
42 @ 3 pitch	8.5 x 14 in.	41	8.5 x 14 in.	41
56 @ 4 pitch	8.5 x 14 in.	55	8.5 x 14 in.	55
84 @ 6 pitch	8.5 x 14 in.	82	8.5 x 14 in.	82
112 @ 8 pitch	8.5 x 14 in.	110	8.5 x 14 in.	110

DSF-60 Printable Widths

Table C-14 lists the number of characters that print per line for DP printing when using the DSF-60 at 10-, 12-, and 15-pitch typewriter fonts.

Table C-14. DSF-60 Printable Widths

Paper Width	Number of Characters per Line		
	10 Pitch	12 Pitch	15 Pitch
7.25 in. (184 mm)	71	85	106
8.27 in. (210 mm)	81	97	121
8.50 in. (215 mm)	83	100	125
11.00 in. (280 mm)	108	130	162
11.69 in. (297 mm)	115	138	173

Laser Printer Sheet Size Specifications

In all the bins of a laser printer, the paper is the same size and is fed in the same direction. Portrait and landscape printing are controlled by the font selected rather than by the physical orientation of the paper.

Laser printer bins have the following bin designation numbers:

LPS8	Bin 2 = The standard tray
	1 = The manual feed
LIS12	Bin 2 = The higher bin
	1 = The lower bin
LIS24	Bin 3 = The 1500 sheet bin
	2 = The higher of the two remaining bins
	1 = The lower of the two remaining bins
LCS15	Bin 2 = The upper paper tray
	1 = The lower paper tray
LDP8	Bin 2 = The standard paper tray
	1 = The manual feed

Laser Printer Form Length Specifications

Table C-15 contains the form length specifications for sheet feeder paper sizes for laser printers except LDP8. Table C-16 contains the specifications for the LDP8.

Table C-15. Laser Sheet Feeder Paper Size Specification

VFU Length Specified	Paper Size	Actual Lines on Page	
		Portrait	Landscape
29 @ 3 pitch	8 x 10 in.	29	23
39 @ 4 pitch	8 x 10 in.	39	30
58 @ 6 pitch	203 x 254 mm	58	45
78 @ 8 pitch	203 x 254 mm	77	60
30 @ 3 pitch	7.2 x 10.10 in.	30	20
40 @ 4 pitch	7.2 x 10.10 in.	39	27
60 @ 6 pitch	182 x 257 mm	58	40
80 @ 8 pitch	182 x 257 mm	78	53
31 @ 3 pitch	8 x 10.51 in.	31	23
42 @ 4 pitch	8 x 10.51 in.	41	30
63 @ 6 pitch	203 x 267 mm	61	45
84 @ 8 pitch	203 x 267 mm	81	60
32 @ 3 pitch	7.25 x 10.5 in.	31	20
43 @ 4 pitch	7.25 x 10.5 in.	41	27
64 @ 6 pitch	184 x 267 mm	61	40
85 @ 8 pitch	184 x 267 mm	81	54
33 @ 3 pitch	8.5 x 10.83 in.	32	24
44 @ 4 pitch	8.5 x 10.83 in.	42	32
65 @ 6 pitch	215 x 275 mm	63	48
86 @ 8 pitch	215 x 275 mm	84	64
34 @ 3 pitch	8.5 x 11 in.	32	24
45 @ 4 pitch	8.5 x 11 in.	43	32
66 @ 6 pitch	215 x 280 mm	63	48
88 @ 8 pitch	215 x 280 mm	85	64
35 @ 3 pitch	8.27 x 11.69 in.	34	23
46 @ 4 pitch	8.27 x 11.69 in.	46[a]	31
72 @ 6 pitch	210 x 297 mm	68	46
93 @ 8 pitch	210 x 297 mm	90	62
36 @ 3 pitch	8.5 x 12.40 in.	36	24
49 @ 4 pitch	8.5 x 12.40 in.	48	32
74 @ 6 pitch	215 x 315 mm	72	48
99 @ 8 pitch	215 x 315 mm	96	64

[a] 45 lines with the LCS15 printer.

(continued)

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Table C-15.   Laser Sheet Feeder Paper Size Specification
(continued)

VFU Length Specified	Paper Size	Actual Lines on Page	
		Portrait	Landscape
37 @ 3 pitch	8.0 x 13 in.	38	23
50 @ 4 pitch	8.0 x 13 in.	51	30
77 @ 6 pitch	203 x 330 mm	76	45
102 @ 8 pitch	203 x 330 mm	101	: 60
39 @ 3 pitch	8.5 x 13 in.	38	24
52 @ 4 pitch	8.5 x 13 in.	51	32
78 @ 6 pitch	215 x 330 mm	76	48
104 @ 8 pitch	215 x 330 mm	101	64
40 @ 3 pitch	8.27 x 13 in.	38	23
53 @ 4 pitch	8.27 x 13 in.	51	31
79 @ 6 pitch	210 x 330 mm	76	46
105 @ 8 pitch	210 x 330 mm	101	62
42 @ 3 pitch	8.5 x 14 in.	41	24
56 @ 4 pitch	8.5 x 14 in.	54	32
84 @ 6 pitch	215 x 356 mm	81	48
112 @ 8 pitch	215 x 356 mm	108	64

Table C-16.   LDP8 Sheet Feeder Paper Size Specification

VFU Length Specified	Paper Size	Actual Lines on Page	
		Portrait	Landscape
32 @ 3 pitch	7.25 x 10.5 in.	30	20
43 @ 4 pitch	(EXEC)	40	26
64 @ 6 pitch	184 x 267 mm	60	40
85 @ 8 pitch	184 x 267 mm	80	53
35 @ 3 pitch	8.27 x 11.69 in.	32	23
46 @ 4 pitch	(A4)	44	30
72 @ 6 pitch	210 x 297 mm	66	46
93 @ 8 pitch	210 x 297 mm	88	61
34 @ 3 pitch	8.5 x 11 in.	31	23
45 @ 4 pitch	(LETTER)	42	31
66 @ 6 pitch	215 x 280 mm	63	47
88 @ 8 pitch	215 x 280 mm	84	63
42 @ 3 pitch	8.5 x 14 in.	40	23
56 @ 4 pitch	(LEGAL)	54	31
84 @ 6 pitch	215 x 356 mm	81	47
112 @ 8 pitch	215 x 356 mm	108	63

Laser Sheet Feeder Paper Widths

Table C-17 lists the number of characters that print per line for DP printing using laser printers at 10-, 12-, and 15-pitch typewriter fonts.

Table C-17. Laser Paper Width

Paper Width	Number of Characters per Line		
	10 Pitch	12 Pitch	15 Pitch
7.20 in. (182 mm)	67	80	100
7.25 in. (184 mm)	67	81	101
8.00 in. (203 mm)	75	90	112
8.27 in. (210 mm)	77	93	116
8.50 in. (215 mm)	80	96	120
10.00 in. (254 mm)	96	115	143
10.10 in. (257 mm)	97	116	144
10.50 in. (267 mm)	101	121	150
10.83 in. (275 mm)	104	125	155
11.00 in. (280 mm)	106	127	158
11.69 in. (297 mm)	112	135	168
12.40 in. (315 mm)	120	144	179
13.00 in. (330 mm)	126	151	188
14.00 in. (356 mm)	136	163	203

PRINTABLE AREA FOR GRAPHICS

Table C-18 contains the printable area on paper sizes for printing graphics.

Table C-18. Printable Area for Graphics

Printer/ Options	Printable Area of Paper	Margin Size
LIS-12/24, LCS15	8.0 x 10.666 in. (from bottom of page)	1/4 in. sides 1/6 in. top and bottom
5577		
No Feeder	8.5 x 11.0 in.	No margin
Twin Sheet Feeder		
No ATT Option	8.5 x 10.0 in.	1.0 in. top, 0.5 in. bottom
ATT Option	8.5 x 10.5 in.	0.5 in. top, 0.5 in. bottom
Ziyad Feeder		
No ATT Option	8.5 x 10.0 in.	1.0 in. top
One ATT Option	8.5 x 10.5 in.	0.5 in. top
Both ATT Options	8.5 x 11.0 in.	
PM019	8.5 x 11.0 in.	No margin

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Appendix D
LDP8 FONT CARTRIDGES

Appendix D contains tables that list LDP8 cartridge information.

HP CARTRIDGE FONTS

Table D-1 lists the cartridge fonts supported on the LDP8 printer.

Table D-1. Cartridge Fonts Supported on the LDP8 Printer

Cartridge Letter	Cartridge Name	Part Number
(F)	Tms Proportional 2	725-3699F
(G)	Legal Elite	725-3701G
(J)	Math Elite	725-3700J
(M)	Prestige Elite P&L	725-3702M
(N)	Letter Gothic P&L	725-3703N
(R)	Presentations 1	725-3704R
(Z)	Microsoft 1A	725-3705Z

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DOWNLOADABLE FONTS

Table D-2 lists the fonts that can be down loaded on the LDP8 printer. These fonts are available on diskette in both portrait and landscape orientation.

**Table D-2.   Supported WIFC
Downloadable Fonts**

Font Name	Pitch
Courier	12
Courier Italic	10, 12
Letter Gothic	15
Narrator	10
Symbol	12
In line Symbol	10
In line Symbol	12
In line Symbol	15
Box Graphics	10
Box Graphics	12
Box Graphics	15

INTERNAL FONTS

Table D-3 lists the internal fonts that are supplied with the LDP8 printer.

Table D-3.   LDP8 Internal Fonts

Font Name	Size	Density	Slant	National Subset
Courier	10 Pitch	Regular		Standard
Courier	10 Pitch	Bold		Standard
Draft	15 Pitch	Regular		Standard
Courier	10 Pitch L	Regular		Standard
Courier	10 Pitch L	Bold		Standard
Draft	15 Pitch L	Regular		Standard

CARTRIDGES SUPPORTED ON THE LDP8 PRINTER

Table D-4 lists the cartridges that are supported on the LDP8. The table also contains the information seen in the font index and the corresponding cartridge letter and font name. When you view the font index in WP, the cartridge letter is not present. Use Table D-4 to identify the fonts which are located on each cartridge.

Note: The cartridge letter I in Table D-4 indicates the font is also an internal font.

FONT INDEX SELECTIONS

When you install WP or WP Plus Peripherals software, all the fonts listed in Table D-4 appear on the font index for the LDP8. However, these fonts are available only if you purchase the corresponding cartridge for the LDP8 printer.

If you select a font from the font index and it does not reside on the cartridge that is loaded into the printer, the printer attempts to choose a font that is a best match. Because it is not possible to predict which font will be selected as the best match, the formatting of the printed results may vary from the original.

To eliminate confusion when choosing fonts for your documents, delete any font entries that are not available on the cartridges you have purchased. If you purchase additional cartridges later, you can recover the entire font index by either reinstalling the Peripheral software.

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Table D-4. LDP8 Font Index Names and Cartridge Font Names

Font Index Names					Cartridge Letter and Font Names	
Family	Size	Density	Slant	National Subset	Cartridge Letter	Cartridge Font Name
F CARTRIDGE						
Helvetica	15 Point	Bold		Standard	F	Helv bold
Tms-Rmn	08 Point	Reg.		Standard	F	TmsRmn med.
Tms-Rmn	10 Point	Reg.		Standard	F	TmsRmn med.[a]
Tms-Rmn	10 Point	Bold		Standard	F	TmsRmn bold
Tms-Rmn	10 Point	Reg.	Italics	Standard	F	TmsRmn ital.
Draft	15 Pitch	Reg.		Standard	F,I,Z	LinePrinter medium
G CARTRIDGE						
PrestigeElite	12 Pitch	Reg.		Legal	G	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Reg.		Ascii	G	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Bold		Legal	G	Prestige Elite bold
PrestigeElite	12 Pitch	Bold		Ascii	G	Prestige Elite bold
PrestigeElite	12 Pitch	Reg.	Italics	Legal	G	Prestige Elite ital.
PrestigeElite	12 Pitch	Reg.	Italics	Ascii	G	Prestige Elite ital.
PrestigeElite	15 Pitch	Reg.		Legal	G	Prestige Elite med.
PrestigeElite	PS Pitch	Reg.		Legal	G	Prestige Elite med.
PrestigeElite	15 Pitch	Reg.		Ascii	G	Prestige Elite med.
PrestigeElite	PS Pitch	Reg.		Ascii	G	Prestige Elite med.
PrestigeElite	15 Pitch L	Reg.		Ascii	G	Prestige Elite med.
PrestigeElite	PS Pitch L	Reg.		Ascii	G	Prestige Elite med.
PrestigeElite	15 Pitch L	Reg.		Legal	G	Prestige Elite med.
PrestigeElite	PS Pitch L	Reg.		Legal	G	Prestige Elite med.
J CARTRIDGE						
PrestigeElite	12 Pitch	Reg.		Scientific	J	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Reg.		Full Sci.	J	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Reg.		Standard	J,M	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Bold		Standard	J,M	Prestige Elite bold
PrestigeElite	12 Pitch	Reg.	Italics	Standard	J,M	Prestige Elite ital.
PrestigeElite	15 Pitch	Reg.		Standard	J	Prestige Elite med.
PrestigeElite	PS Pitch	Reg.		Standard	J	Prestige Elite med.
PrestigeElite	15 Pitch	Reg.		Full Sci	J	Prestige Math med.
PrestigeElite	PS Pitch	Reg.		Full Sci	J	Prestige Math med.
M CARTRIDGE						
PrestigeElite	12 Pitch	Reg.		Standard	M,J	Prestige Elite med.[a]
PrestigeElite	12 Pitch	Bold		Standard	M,J	Prestige Elite bold
PrestigeElite	12 Pitch	Reg.	Italics	Standard	M,J	Prestige Elite ital.
PrestigeElite	12 Pitch L	Reg.		Standard	M	Prestige Elite med.[a]
PrestigeElite	12 Pitch L	Bold		Standard	M	Prestige Elite bold
PrestigeELite	12 Pitch L	Reg.	Italics	Standard	M	Prestige Elite ital.

[a]Denotes cartridge Primary Default Font.

(continued)

Font Index Names					Cartridge Letter and Font Names	
Family	Size	Density	Slant	National Subset	Cartridge Letter	Cartridge Font Name
N CARTRIDGE						
LetterGothic	12 Pitch	Reg.		Standard	N	Letter Gothic med.[a]
LetterGothic	12 Pitch	Bold		Standard	N	Letter Gothic bold
LetterGothic	12 Pitch	Reg.	Italics	Standard	N	Letter Gothic ital.
LetterGothic	12 Pitch L	Reg.		Standard	N	Letter Gothic med.[a]
LetterGothic	12 Pitch L	Bold		Standard	N	Letter Gothic bold
LetterGothic	12 Pitch L	Reg.	Italics	Standard	N	Letter Gothic ital.
R CARTRIDGE						
Presentation	14 Point	Bold		Ascii	R	PRESENTATION BOLD[a]
Presentation	14 Point	Bold		Legal	R	PRESENTATION BOLD[a]
Presentation	16 Point	Bold		Ascii	R	PRESENTATION BOLD
Presentation	16 Point	Bold		Legal	R	PRESENTATION BOLD
Presentation	18 Point	Bold		Ascii	R	PRESENTATION BOLD
Presentation	18 Point	Bold		Legal	R	PRESENTATION BOLD
Presentation	14 Point L	Bold		Ascii	R	PRESENTATION BOLD[a]
Presentation	14 Point L	Bold		Legal	R	PRESENTATION BOLD[a]
Presentation	16 Point L	Bold		Ascii	R	PRESENTATION BOLD
Presentation	16 Point L	Bold		Legal	R	PRESENTATION BOLD
Presentation	18 Point L	Bold		Ascii	R	PRESENTATION BOLD
Presentation	18 Point L	Bold		Legal	R	PRESENTATION BOLD
LetterGothic	10 Pitch	Reg.		Ascii	R	Letter Gothic med.
LetterGothic	10 Pitch	Reg.		Legal	R	Letter Gothic med.
LetterGothic	10 Pitch L	Reg.		Ascii	R	Letter Gothic med.
LetterGothic	10 Pitch L	Reg.		Legal	R	Letter Gothic med.
Z CARTRIDGE						
Times-Roman	08 Point	Reg.		Standard	Z	TmsRmn med.
Times-Roman	10 Point	Reg.		Standard	Z	TmsRmn med.
Times-Roman	12 Point	Reg.		Standard	Z	TmsRmn med.
Times-Roman	10 Point	Bold		Standard	Z	TmsRmn bold
Times-Roman	12 Point	Bold		Standard	Z	TmsRmn bold
Times-Roman	14 Point	Bold		Standard	Z	TmsRmn bold
Times-Roman	10 Point	Reg.	Italics	Standard	Z	TmsRmn italic
Times-Roman	12 Point	Reg.	Italics	Standard	Z	TmsRmn italic
Helvetica	08 Point	Reg.		Standard	Z	Helv med.
Helvetica	10 Point	Reg.		Standard	Z	Helv med.
Helvetica	12 Point	Reg.		Standard	Z	Helv med.
Helvetica	10 Point	Bold		Standard	Z	Helv bold
Helvetica	12 Point	Bold		Standard	Z	Helv bold
Helvetica	14 Point	Bold		Standard	Z	Helv bold
Helvetica	10 Point	Reg.	Oblique	Standard	Z	Helv italic
Helvetica	12 Point	Reg.	Oblique	Standard	Z	Helv italic
Draft	15 Pitch	Reg.		Standard	Z,F,I	LinePrinter medium
Draft	PS Pitch	Reg.		Standard	Z	LinePrinter medium
Draft	15 Pitch L	Reg.		Standard	Z,I	LinePrinter medium
Draft	PS Pitch L	Reg.		Standard	Z	LinePrinter medium

[a]Denotes cartridge Primary Default Font.

APPENDIXES

Appendix E
ERROR MESSAGES

INTRODUCTION

Appendix E contains error messages that can appear when you print or run the utilities. Error messages apply specifically to each utility and print application. The following list contains the name of the utility or print application and the page on which these error messages begin in this appendix.

- WP Plus Peripheral Utilities error messages begin on page E-2.
- WP Plus Printing error messages begin on page E-12.
- WP Peripheral Utilities error messages begin on page E-18.
- WP Printing error messages begin on page E-31.
- FONTCNTL Utility error messages begin on page E-36.
- FORMCNTL Utility error messages begin on page E-41.
- PSPRINT Utility error messages begin on page E-46.

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WP PLUS PERIPHERAL UTILITIES ERROR MESSAGES

Already Exists

Meaning

During the Create Option of the PostScript Font Sizing Utility, you have selected a point size and orientation that already exists.

Action

Respecify or choose Re-create.

Alteration Unsuccessful

Meaning

Your attempt to alter a font did not complete, perhaps the font is in use.

Action

Try again later.

Cannot Alter a Font for Chosen Route

Meaning

The Alter a Font Utility is available only to (and necessary for) routes supporting non-font loadable (daisy) printers and the route selected is not that of a non-font loadable printer.

Action

Select a non-font loadable printer route.

Cannot Create a Font for Chosen Route

Meaning

The Create a Font Utility is available only to (and necessary for) routes supporting non-font loadable printers and the route selected is not that of a non-font loadable (daisy) printer.

Action

Select a non-font loadable printer route.

Cannot Get Drive Vector

Meaning

See Cannot Reserve Disk Drive.

Cannot Mount Volume

Meaning

See Cannot Reserve Disk Drive.

Cannot Release Disk Drive

Meaning
See Cannot Reserve Disk Drive.

Cannot Get Reserve Disk Drive

Meaning
The requested disk drive is in use, reserved, or off line.

Action
Check disk drive status.

Catalog Damaged (First Sector)

Meaning
Self explanatory.

Action
Contact Customer Service.

Catalog Damaged (Free Chain)

Meaning
Self explanatory.

Action
Contact Customer Service.

Delete Error

Meaning
See *** Unsuccessful.

Diskette Is Write Protected

Meaning
Unable to write to the diskette.

Action
Make sure you have the correct diskette and then check the write-protection tab.

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Diskette Is Not Appropriate For Conversion

Meaning

Only single file font diskettes prior to Release 1.0 are convertible by the Single Font Diskette Update utility.

Action

Use font diskettes prior to Release 1.0.

Diskette Previously Converted

Meaning

Self explanatory.

Action

No conversion necessary.

Drive Already Reserved

Meaning

See Cannot Reserve Disk Drive.

Drive Not Ready

Meaning

See Cannot Reserve Disk Drive.

Duplicate Family number: xx

Meaning

While performing the Order Font Families utility, an attempt was made to create a family number (xx) which already exists.

Action

Respecify.

Duplicate Font

Meaning

You are attempting to create a font for a unit, and the font already exists.

Action

Verify your input.

Duplicate Volume Name

Meaning

A disk of the same name is already mounted.

Action

Respecify disk name.

Error Opening Font File

Meaning

The requested font file cannot be opened, perhaps because it is in use.

Action

Try again later.

Error Opening Printer Default File

Meaning

The file containing the default parameters cannot be opened. It may be in use by a printer or a workstation running peripheral utilities.

Action

Try again later. Make sure all printers are idle, no one is running peripheral utilities, or no one is indexing fonts.

Error Reading Font File

Meaning

The requested font file cannot be opened, perhaps because it is being updated by another user.

Action

Try again later.

Error Reading font list

Meaning

The list of existing fonts for the route you have selected cannot be read. Generally, either the font catalog is missing, or (on a VS) the printer has not received a wake-up job after system configuration.

Action

On a VS, send the printer a wake-up job.

Error Reading Fontlist

Meaning

The Font list file for the device cannot be read, usually because there is an access conflict, the font catalog has been deleted, or it has never been installed.

Action

For deleted font catalogs, run WP Plus Font Regeneration (to recreate the Font list file) after reinstalling WP Plus Utilities. If an access conflict, try again later.

Error Reading Printer Default File

Meaning

The file containing default parameters cannot be read, perhaps because it is being updated.

Action

Try again later.

Error Writing to Font File

Meaning

The requested update of a font file cannot be completed, perhaps because the font is in use.

Action

Try again later.

Error Writing to Font List

Meaning

The requested update of a font list cannot be completed, perhaps because the font catalog is in use.

Action

Try again later.

Error Writing to Printer Default File

Meaning

The default parameter file cannot be updated, perhaps because it is in use.

Action

Try the update again later.

Font catalog is full, No more adding

Meaning

A maximum of 64 fonts is allowed for each family.

Action

Determine if some fonts should be deleted.

Invalid letters, only use a-z, A-Z, or 0-9

Meaning

Self explanatory.

Action

Respecify.

Invalid Key

Meaning

The key which was entered has no meaning within the function being performed.

Action

Press a key appropriate for the function.

Invalid or No Valid Label

Meaning

Disk is uninitialized or damaged.

Action

Check disk.

Invalid Unit Number

Meaning

The number entered in response to the "Enter Unit #:" prompt is not one acceptable to the system.

Action

Respecify.

I/O Error Rewriting Volume Label

Meaning

Self-explanatory.

Action

Verify integrity of the volume label.

Master Processor Overload

Meaning

The master is unable to service the request from the slave. This condition usually occurs when there are too many files open.

Action

Try the request later.

NetWork Overload

Meaning

Self explanatory

Action

Try again later.

No Conversion Necessary Press CANCEL to Return to Previous Menu

During LIS 12/24 Auto Creation Conversion utility, all the LIS 12/24 fonts are already on the system disk.

Action

Press CANCEL.

Next Screen Error

Meaning

See No next screen.

No Disk in Drive

Meaning

Self-explanatory.

Action

Place a disk in drive and make sure that the diskette is inserted in the proper direction.

No fonts selected

Meaning

During the Font Sizing utility, no new font specifications were entered.

Action

Enter selections for the new fonts.

No next screen

Meaning

This is displayed if you press NEXT SCRN while the cursor is in the last screen of font information.

Action

Select another key.

No previous screen

Meaning

This is displayed if you press PREV SCRN while the cursor is in the first screen of font information.

Action

Select another key.

No print route entered

Meaning

While running Font utilities, the EXECUTE key was pressed before a print route was specified.

Action

Specify a print route. You can display print routes by pressing the NAME key.

Not a valid print route

Meaning

The specified print route is not acceptable for Font utilities.

Action

Specify an acceptable print route. You can display print routes by pressing the NAME key.

Option not currently available

Meaning

The function you have selected is not available although it is listed in the menu.

Action

Select another option or press CANCEL.

Please Re-Install Font Conversion Utility
Font Conversion Files Unavailable
Press EXECUTE or CANCEL to Exit

Meaning

The Peripheral utilities program has been damaged.

Action

Reinstall Peripheral utilities.

Previous Screen Error

Meaning

See No previous screen.

Route does not exist

Meaning

The print route you entered has not been specified for the system.

Action

Specify an acceptable print route. You can display print routes by pressing the NAME key.

System Connection Broken

Meaning

While accessing a networked system, a network failure occurred.

Action

Check system connections and re-IPL as necessary.

System Disk Full

Meaning

There is no room on the system disk for addition of new files.

Action

Delete any files which are no longer needed.

System not Accessible

Meaning

The requested system cannot be found on the network.

Action

Respecify or check system connections.

Unable To Process Request At This Time
A Problem Exists With The Disk Drive
Press EXECUTE or CANCEL to Exit

Meaning

Self explanatory — this message appears during Single Font Diskette Update for OIS only.

Action

Try the request later.

Unknown error in adding

Meaning

An error was encountered during an attempt to add a font.

Action

Because the error may have affected the attempt to add a font, determine whether your font has been added correctly.

*** Unsuccessful

Meaning

The attempt to delete a font was unsuccessful, perhaps the font was in use.

Action

Try again later.

VAU Map Damaged

Meaning

The Volume allocation unit map has been damaged.

Action

Contact Customer Service.

12 Point PORTRAIT Fonts not available

Meaning

These fonts are used as the basis for the PostScript Font Sizing utility. You have requested a conversion for which the required font is not available.

Action

Respecify or reinstall WP Plus Peripherals to reinstall 12 point fonts.

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WP PLUS GENERAL PRINTING ERROR MESSAGES

This section lists the general printing error messages that may appear while using WP Plus. The following destination codes are given to indicate where the error messages may appear in WP Plus.

- P = Printer
- L = Log File
- U = User Workstation
- O = Operator Default Workstation.

Damaged document. (P)

Meaning

The internal structure of the document is damaged and information may have been lost.

Action

Run the Recovery utility on the document before attempting to edit or print it.

Damaged document I.D.: xx (P,L)

Meaning

The document whose identification number is xx is damaged and information may have been lost.

Action

Run the Recovery Utility on the document before attempting to edit or print.

Diacritics Not Supported on this Printer (P,L)

Meaning

An attempt was made to print a document containing diacritics on the LPS-12, which does not support diacritics. If the document also contains footnotes, the termination will occur several lines earlier than the place where the diacritic actually appeared.

Action

Either delete any diacritics from the document or print the document on a printer with the appropriate support.

Document access error. (P)

Meaning

The document you are trying to access is already in use. Possibly you are trying to edit a document which is being printed by the regular Print function, or someone else may be using the document.

Action

If the message is caused by a conflict with the Print function, use Hot Print; you may continue editing the document while it is printing. If no one else is using the document, log off and then log on again, or see your system administrator.

Document contains more than three columns - Unable to process. (P)

Meaning

Self-explanatory. Only three columns are allowed in a format statement.

Action

Modify the document so that it contains three columns or less.

Document not found. (P)

Meaning

A request has been made to print a document that is no longer available. It may be a primary or a merge document.

Action

Verify references within your document. Make sure that none of your documents have been deleted.

File Source Connection Broken (P,L)

Meaning

The printer is attempting to access files on a system which is not in the network.

Action

Check system connections and re-IPL as necessary.

Hdw Data-Link Error (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

APPENDIXES

Hdw Parity Error (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

Hdw Slave Dropped Power (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

Hdw Write-Check Compare Error (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

hh:mm:ss Operator Intervention Required. (O)

Meaning

The printer requires attention, such as addition of paper or a different daisy wheel.

Action

Follow the instructions indicated by the printer.

Illegal Script (P,L)

Meaning

An attempt was made to print a document containing a second-level (double) script on an LPS-12 printer, which has no multilevel superscript and subscript support.

Action

Either remove the second-level double script from the document or print the document on a printer with the appropriate support.

Illegal status code: xx. (P)

Meaning

An unknown error has occurred.

Action

Contact Customer Service.

Illegal width. (P,L)

Meaning

The combined width of the left margin and the format line exceed the printable area specified (using page length to specify paper dimensions). The printout is terminated after the printing of this message.

Action

Shorten the line(s), increase the length of the format line, or change font, paper, or orientation and reprint the document.

Network Error (P,L)

Meaning

While accessing a networked system, a network failure occurred.

Action

Check system connections and re-IPL as necessary.

Permanent I/O error : xx (P,L)

Meaning

Either a hardware error occurred or the document is damaged.

Action

See the system administrator.

Please consult the system administrator. (P,L)

Meaning

Self-explanatory.

Action

Self-explanatory.

APPENDIXES

Printout cancelled by operator. (P,L,U)

Meaning
Self-explanatory.

Action
None.

Printout terminated by system. (P,L)

Meaning
Either an I/O error occurred, or this message is accompanied by another error message.

Action
Correct the error and retry.

Printer job xxxxxxxx cancelled. (U)

Meaning
You have deleted the indicated printer job from the queue.

Action
None.

Printer job xxxxxxxx completed. (U)

Meaning
The document has printed successfully and all files have been closed.

Action
None.

Printer job xxxxxxx terminated by system. See printout for error. (U)

Meaning
Self-explanatory.

Action
None.

Routing Table Full (P,L)

Meaning
While accessing a networked system, a network failure occurred.

Action
Check system connections and re-IPL as necessary.

Starting variable set does not exist. (P)

Meaning

There is an error in the secondary document required for Merge.

Action

Correct the variable set parameters or the secondary document.

XFS MFS Master Processor Overload (PL)

Meaning

The master is unable to service the request from the slave, usually because there are too many files open.

Action

Try the request later.

WP PERIPHERAL UTILITIES ERROR MESSAGES

Access conflict

Meaning

The file you are attempting to access is in use by someone else.

Action

Wait for the file to be available. Perhaps it has been left open by mistake, consult logged-on users.

Already Exists

Meaning

The font you are adding already exists.

Action

Press CANCEL; if you wish to recreate the font, specify 'Recreate' on the menu.

A Version Update is necessary for Font Indexing

Meaning

Release 4.0 or greater Peripheral Utilities incorporates font indexing similar to WP Plus Peripheral Utilities; therefore, some updates are required to existing font catalogs.

Action

Press EXECUTE to begin the update.

Blank Translation Table

Meaning

An attempt is being made to add a translation table with no entries.

Action

Use a more appropriate translation table.

Cannot Get Drive Vector

Meaning

See Cannot Reserve Disk Drive.

Cannot Mount Volume

Meaning

The requested disk drive is in use, reserved, or off-line.

Action

Check disk drive status.

Cannot open specified file.

Meaning

The file you have requested is not on the system.

Action

Verify the file name and reenter.

Cannot open translation table catalogue.

Meaning

The file, PRINT.TRANS.0 on OIS, @system@ WPSPRTRN on VS cannot be opened, perhaps because it is in use.

Action

Try again later, making sure all printers are idle.

Cannot read translation table catalogue.

Meaning

Perhaps because it is being updated.

Action

Try again later.

Cannot Release Disk Drive

Meaning

The requested disk drive is in use, reserved, or off-line.

Action

Check disk drive status.

Cannot Reserve Disk Drive

Meaning

The requested disk drive is in use, reserved, or off-line.

Action

Check disk drive status.

Password error

Meaning

The file containing the printer parameters is protected by a password and cannot be accessed unless the password is entered correctly.

Action

Specify the correct password or press CANCEL.

Can't Access Translation Table

Meaning

The file PRINT.TRANS.0 cannot be read, perhaps because it is being updated.

Action

Try again later.

Can't Open LIS Options File

Meaning

The PRINT Options File cannot be opened, perhaps because it is in use.

Action

See Access Conflict.

Catalog space exhausted

Meaning

The disk catalog contains the maximum number of entries.

Action

Delete some files.

Default File cannot be read in
Peripherals Utilities installation must be aborted
Press any key to exit

Meaning

Self-explanatory.

Action

Press any key.

Diskette Previously Converted

Meaning

Self-explanatory.

Action

No conversion necessary.

Diskette Is Not Appropriate For Conversion

Meaning

Only single file font diskettes prior to Release 1.0 are convertible by the single font diskette update utility.

Action

Use pre Release 1.0 font diskettes.

Diskette Is Write-Protected

Meaning

Unable to write to the diskette.

Action

Make sure you have the correct diskette and then check the write protection tab.

Drive Already Reserved

Meaning

See Cannot Reserve Disk Drive.

Drive Not Ready

Meaning

See Cannot Reserve Disk Drive.

APPENDIXES

Duplicate Font

Meaning
Self-explanatory.

Action
Verify your input or create a different font.

Duplicate Volume Name

Meaning
A disk of the same name is already mounted.

Action
Respecify disk name.

Error adding Translation Table

Meaning
An error occurred while adding a table to PRINT.TRANS.0.

Action
Contact customer service.

Error Opening Font File

Meaning
The requested Font File cannot be opened, perhaps because it is presently in use or has been deleted.

Action
Try again later if in use; re-install WP Peripherals and run WP Font Regeneration if it was deleted.

Error Reading Font File

Meaning
The requested Font File cannot be read, perhaps because it is presently being updated or has been deleted.

Action
See Error Opening Font File.

Error Reading Font List

Meaning

The Font List file for the device cannot be read, usually because there is an access conflict, or the font catalog has been deleted or never installed.

Action

For deleted font catalogs, run WP Font Regeneration to recreate after re-installing WP Peripherals.

Error Writing to Font File

Meaning

The update of the requested Font File cannot be done, perhaps because the file is in use.

Action

Try again later.

File not found on volume

Meaning

You may have mistyped the file name or the file may not be on the specified volume.

Action

Respecify the file name or look on another volume for the file

Font catalog is full, no more adding

Meaning

A maximum of 64 fonts is allowed for each family.

Action

Determine if some fonts should be deleted.

Font exists already

Meaning

The font catalogs already contain the font you are attempting to add.

Action

Verify your input, or select another font.

Font File Does Not Exist

Meaning

The Font File for the requested device is not on the system.

Action

Select another font.

Hardware I/O error

Meaning

Self-explanatory.

Action

Contact customer service.

Invalid or No Volume Label

Meaning

Disk is uninitialized or damaged.

Action

Check disk.

Invalid key

Meaning

The key which was entered has no meaning within the function being performed.

Action

Press a key appropriate for the function.

Invalid Unit Number

Meaning

The unit number entered is not a valid one for this system.

Action

Respecify.

Insufficient Workstation Memory
Press CANCEL

Meaning

Peripheral utilities cannot be performed from workstations with less than 64K of memory.

Action

Use a 64K workstation.

Lock, program BUG

Meaning

The file you are attempting to access is in use by someone else.

Action

Wait for the file to be available. Perhaps it has been left open by mistake, consult logged-on users.

Master processor overload

Meaning

The master is unable to service the request from the slave, usually because there are too many files open.

Action

Try the request later.

Name-string format error

Meaning

The file name you have entered does not conform to naming conventions for the system.

Action

Check for invalid characters and respecify the file name.

NetWork Overload

Meaning
Self-explanatory.

Action
Try again later.

APPENDIXES

No Conversion Necessary
Press CANCEL to Return to Previous Menu

Meaning

You are attempting to run the LIS 12/24 Font Auto-Creation Utility and all fonts have already been converted.

Action

Press CANCEL.

No Disk In Drive

Meaning

Disk drive is either empty or the diskette was inserted in the wrong direction.

Action

Place a disk in drive or make sure that the diskette is inserted in the proper direction.

No Next screen

Meaning

You have pressed the NEXT SCRN key while the cursor is in the last screen load of font information.

Action

Select another key.

No Previous Screen

Meaning

You have pressed the PREV SCRN key while the cursor is in the first screenload of font information.

Action

Select another key.

No room in table

Meaning

The limit of 128 font entries has been reached for the specified printer.

Action

Delete unnecessary fonts for that printer from the index.

No tables for device requested.

Meaning

No tables/fonts exist on the system for the printer type you have selected.

Action

Select another printer type.

No Update Necessary

Meaning

Self-explanatory.

Action

None.

Not a unique table name

Meaning

The table name you have entered has been used.

Action

Specify another name.

Option Not Available

Meaning

The function you have selected is not available although it is listed in the menu.

Action

Select another option or press CANCEL.

Please Re-Install Font Conversion Utility
Font Conversion Files Unavailable
Press EXECUTE or CANCEL to Exit

Meaning

The Peripheral Utilities program has been damaged.

Action

Reinstall Peripheral Utilities.

Requested Device not Supported.

Meaning

Your system does not support the printer type you have selected.

Action

Choose another printer type.

System Connection Broken

Meaning

While accessing a networked system, a network failure occurred.

Action

Check system connections and re-IPL as necessary.

System Disk Full

Meaning

There is no room on the system disk for addition of new files.

Action

Delete any files that are no longer needed.

System Not Accessible

Meaning

The requested system cannot be found on the network.

Action

Respecify or check system connections.

Table name already exists. Hit EXECUTE to overwrite.

Meaning

Self-explanatory.

Action

Press EXECUTE to recreate the table, CANCEL if you don't wish to overwrite at this time.

Tree structure error

Meaning

The file name you have entered is incomplete.

Action

Respecify the file name.

Unable To Process Request At This Time
A Problem Exists With The Disk Drive
Press EXECUTE or CANCEL to Exit

Meaning

Self-explanatory hardware error.

Action

Press CANCEL or EXECUTE.

Unknown error in adding

Meaning

An error was encountered during an attempt to add a font. The font may not have been added successfully.

Action

Determine if your font has been added correctly.

Update not Successful

Meaning

The requested operation could not be performed, perhaps because of an access conflict.

Action

See Access Conflict; if there is no conflict, contact Customer Service.

(Update Not Successful)

Meaning

This is usually due to access conflicts.

Action

Make sure that printers are idle, that no one is indexing fonts; then restart the procedure.

APPENDIXES

Volume not found

Meaning

The volume you are trying to access is not mounted.

Action

Mount the volume and try again or respecify the volume name.

12 Point Fonts cannot be deleted

Meaning

You cannot delete 12-point PostScript fonts; they are used by the PostScript Font-Sizing utility.

Action

None.

12 Point PORTRAIT Fonts not available

Meaning

These fonts are used as the basis for the PostScript Font Sizing Utility. You have requested a conversion for which the required font is not available.

Action

Respecify or re-install WP Peripherals to re-install 12 point fonts.

128 Font Limit Reached

Meaning

Self-explanatory.

Action

Delete some unused fonts to make room for the new ones.

WP GENERAL PRINTING ERROR MESSAGES

This section lists the general printing error messages that can appear while using WP. The following destination codes are given to indicate where the error messages appear in WP.

- P = Printer
- L = Log File/Text File
- U = User Workstation
- O = Operator Default Workstation
- D = Document Summary

Damaged document I.D.: xxxxx (P,L)

Meaning

The document whose identification number is xxxxx is damaged and information may have been lost.

Action

Run the Recovery Utility on the document before attempting to edit or print.

Document will be deleted after printing (D)

Meaning
Self-explanatory.

Action

This an advisory message; no action is necessary.

File Source Connection Broken (P,L)

Meaning

The printer is attempting to access files on a system which is not in the network.

Action

Check system connections and re-IPL as necessary.

Hdw Data-Link Error (P,L)

Meaning
Unrecoverable hardware error.

Action
Check the printer hardware, then contact Customer Service.

Hdw Parity Error (P,L)

Hdw Slave Dropped Power (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

Hdw Write-Check Compare Error (P,L)

Meaning

Unrecoverable hardware error.

Action

Check the printer hardware, then contact Customer Service.

Illegal Code Sequence xx. (L)

Meaning

Escape Sequence out of order for text files.

Action

Recreate text file — remove illegal code.

Illegal Script (P,L)

Meaning

An attempt was made to print a document containing a second-level (double) script on an LPS-12 printer, which has no multilevel superscript and subscript support.

Action

Either remove the second-level double script from the document or print the document on a printer with the appropriate support.

Illegal width. (P,L)

Meaning

The combined width of the left margin and the format line exceed the printable area specified (using page length to specify paper dimensions). The printout is terminated after the printing of this message.

Action

Shorten the line(s), increase the length of the format line, or change font, paper, or orientation and reprint the document.

Invalid FRN (FRN = File Reference Number) (P,L)

Meaning

Error in opening a file, usually due to an access conflict.

Action

Wait for file to be available; it may have been left open by mistake — consult logged-on users.

Notify xx on system xx (D)

Meaning

Self-explanatory.

Action

This an advisory message; no action is necessary.

Operation Out of Sequence (L)

Meaning

Escape sequence out of order for text files.

Action

Recreate text file — remove illegal code.

Operator Intervention Required. (O)

Meaning

The printer requires attention, such as addition of paper or a different daisy wheel.

Action

Follow the instructions indicated by the printer.

Network Error (P,L)

Meaning

While accessing a networked system, a network failure occurred.

Action

Check system connections and re-IPL as necessary.

Pages to be printed xx (D)

Meaning

Self-explanatory.

Action

This an advisory message; no action is necessary.

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Permanent I/O error : xx (P,L)

Meaning

Either a hardware error occurred or the document is damaged.

Action

See the system administrator.

Printout cancelled by operator. (P,L,U)

Meaning

Self-explanatory.

Action

None.

Printout terminated by system. (P,L)

Meaning

Either an I/O error occurred, or this message is accompanied by another error message.

Action

Correct the error and retry.

Printer job xxxxxxxx cancelled. (U)

Meaning

You have deleted the indicated printer job from the queue.

Action

None.

Printer job xxxxxxxx completed. (U)

Meaning

The document has printed successfully and all files have been closed.

Action

None.

Printer job xxxxxxx terminated by system. See printout for error. (U)

Meaning

Self-explanatory.

Action

None.

Routing Table Full (P,L)

Meaning

While accessing a networked system, a network failure occurred.

Action

Check system connections and re-IPL as necessary.

Secondary document will be deleted after printing (D)

Meaning

Self-explanatory.

Action

This an advisory message; no action is necessary.

System Error (U)

Meaning

Fatal error of unknown origin.

Action

IPL system and try again.

XFS MFS Master Processor Overload (P,L)

Meaning

The master is unable to service the request from the slave, usually because there are too many files open.

Action

Try the request later.

XFS RN Invalid (L,U)

Meaning

The WISE Reference Number is invalid. Error in opening a file, usually due to an access conflict.

Action

Wait for file to be available; it may have been left open by mistake — consult logged-on users.

APPENDIXES

FONTCNTL UTILITY ERROR MESSAGES

You may encounter the following error messages while running the FONTCNTL utility:

A graphic font cannot be a default font. Please respecify.

Meaning
Self-explanatory.

Action
Specify a nongraphic font as your default font.

A graphic font cannot be patched. Please select another font.

Meaning
Self-explanatory.

Action
Specify another font.

An OPEN error occurred for a font file. Please respecify the file.

Meaning
Self-explanatory.

Action
Verify and respecify the font file.

Destination file names and libraries conflict. Re-enter input and select PF-KEY.

Meaning
Self-explanatory.

Action
Verify and respecify your destination.

Entry/association already exists. Check the font number/file name and try again.

Meaning
Self-explanatory.

Action
Respecify the font number/file name and try again.

Error: Font value invalid for this printer type. Please re-enter.

Meaning

Self-explanatory.

Action

Verify and respecify the chars-per-inch value for your particular printer type.

Error: Printer type is unknown or not supported. Please re-enter.

Meaning

Self-explanatory.

Action

Re-enter a valid printer type.

Font catalogue I/O error: Please check the input and select the (PF-KEY).

Meaning

Self-explanatory.

Action

Verify the input and select the (PF-KEY) to try again.

Font Catalogue is in use, please retry later.

Meaning

The catalogue is being utilized by another user(s).

Action

Wait for the user to finish and try again.

Font entry does not exist. Re-enter font number or device and select (PF Key).

Meaning

Self-explanatory.

Action

Respecify your font number or device.

Font file does not exist. Re-enter file specification and select (PF Key).

Meaning

You may have mistyped the font file name.

Action

Re-enter file specification and select (PF Key).

APPENDIXES

Font number already exists. Please re-enter the parameter and select (PF Key).

Meaning

Self-explanatory.

Action

Verify and re-enter your font number.

Invalid device name. Please respecify the device and select (PF Key).

Meaning

Self-explanatory.

Action

Respecify the device name.

Invalid parameter value: Check and re-enter parameter(s) and select (PF Key).

Meaning

Self-explanatory.

Action

Verify and re-enter your parameter(s).

OIS volume name not specified or longer than 8 characters. Please respecify.

Meaning

Self-explanatory.

Action

Respecify your volume name.

Please enter a valid font file specification.

Meaning

Self-explanatory.

Action

Specify a valid font file.

Replace Rejected: Fontnumber/fontfile/library/volume were modified. Try again.

Meaning

Font number/file/library/volume have been accessed and modified by another user.

Action

Respecify input and try again.

The input file is not a font file. Enter a valid font file for input.

Meaning
Self-explanatory.

Action
Specify a valid font file as your input file.

The font is not designed for this device. Please respecify the device or font.

Meaning
Self-explanatory.

Action
Respecify the device or the font.

The specified file cannot be found.

Meaning
You may have mistyped the file name.

Action
Respecify the filename.

The specified file is in use and cannot be scratched.

Meaning
The file you are trying to scratch is being utilized by another user.

Action
Wait for the user to finish and try again.

The specified file already exists. Use PF3 to scratch or specify another file.

Meaning
Self-explanatory.

Action
Respecify or use PF3 to scratch.

The specified library cannot be found.

Meaning
You may have mistyped the library name.

Action
Respecify the library name.

The specified volume is not mounted.

Meaning

The volume you are trying to access is not mounted.

Action

Mount the volume and try again.

There are no font entries for this printer.

Meaning

Self-explanatory.

Action

Respecify the printer type and try again.

Unexpected error. Please re-enter your specification and select (PF Key).

Meaning

Self-explanatory.

Action

Contact your field representative to report the problem. Re-enter your specification to try again.

Volume not mounted. Please mount the volume and/or select (PF Key).

Meaning

The volume you are trying to access is not mounted.

Action

Mount the volume and try again.

WARNING: There are cataloged fonts (files) which are not available.

Meaning

Self-explanatory.

Action

No action has to be taken.

You do not have SCRATCH access rights to this file.

Meaning

Self-explanatory.

Action

Respecify the file name or contact the system administrator.

FORMCNTL UTILITY ERROR MESSAGES

You may encounter the following error messages while running the FORMCNTL utility:

All buffers are in use, FORMCNTL must be terminated.

Meaning
No buffers are available because the memory is all in use.

Action
Terminate FORMCNTL and try the operation again.

Error: Channels have already been defined for this line.

Meaning
Self-explanatory.

Action
Do not define a channel(s) for this line.

Error: Chars-per-inch value invalid for this printer type. Please re-enter.

Meaning
Self-explanatory.

Action
Verify and respecify the chars-per-inch value for your particular printer type.

Error: Ideograms to Latin ratio value is invalid. Please re-enter.

Meaning
Self-explanatory.

Action
Verify and respecify the value of the Latin ratio to ideograms.

Error: Form number must be an integer between 0 and 254. Please re-enter.

Meaning
Self-explanatory.

Action
Try the operation again specifying an integer between 0 and 254.

Error: Length-of-form must be an integer between 6 and 144. Please re-enter.

Meaning

Self-explanatory.

Action

Try the operation again using an integer between 6 and 144.

Error: Line number must be an integer between 1 and the previously specified forms length.

Meaning

Self-explanatory.

Action

Specify a line number between 1 and the previously specified forms length.

Error: Line number exceeds previously specified form length.

Meaning

Self-explanatory.

Action

Specify a line number that is equal to or less than the previously specified form length.

Error: Lines-per-inch value invalid for this printer type. Please re-enter.

Meaning

Self-explanatory.

Action

Verify and respecify the lines-per-inch value for your particular printer type.

Error: No channels have been defined for this line.

Meaning

Self-explanatory.

Action

Define channels for this line.

Error: No forms are defined for this printer. Please re-enter.

Meaning
Self-explanatory.

Action
Respecify printer type or re-enter new FORMCNTL function.

Error: No line number has been specified for these channels.

Meaning
Self-explanatory.

Action
Specify a line number for these channels.

Error: There should not be the same font number. Please re-enter.

Meaning
Ideographic font and optional font selection should not be the same.

Action
Respecify ideographic font or optional font selection.

FORMDFFN conversion incomplete — unable to create new file (no disk space).

Meaning
Self-explanatory.

Action
Use the RECOPY utility to allocate more records or scratch unneeded files to get more space on the disk.

FORMDFFN conversion incomplete — unable to RENAME new file.

Meaning
Self-explanatory.

Action
Re-try and if this message appears again, use the RECOPY utility.

FORMDFFN conversion incomplete — unable to SCRATCH old file.

Meaning
Self-explanatory.

Action
Re-try and if this message appears again, use the recopy utility.

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Invalid parameter used in DEVDATA SVC call, FORMCNTL must be terminated.

Meaning

Self-explanatory.

Action

Terminate the FORMCNTL program and try again. Be sure to specify a valid parameter.

Invalid value used in DEVDATA SVC call, FORMCNTL must be terminated.

Meaning

Self-explanatory.

Action

Terminate the FORMCNTL program and try again. Be sure to specify a valid value.

Not enough buffer space to accommodate all printers with forms.

Meaning

Self-explanatory.

Action

Call your field representative, you have an old version of FORMCNTL that does not correspond to the new DEVLIST.

SORRY - Unable to add this record due to FORMDFFN file out of space.

Meaning

Self-explanatory.

Action

Use the RECOPY utility to allocate more records or scratch unneeded files to get more space on the disk.

There are not any printers available to define forms.

Meaning

Self-explanatory.

Action

Install the corresponding DEVLIST version.

There is no buffer space to do the SCRATCH.

Meaning

Self-explanatory.

Action

Re-run the FORMCNTL program from a higher link level or define a larger user modifiable area.

The specified volume is held exclusively by another user.

Meaning

The volume you specified is reserved with the EX (Exclusive Use) option in effect.

Action

Wait for the user who reserved the volume to release it, or ask the user to change the status on the volume, or specify another volume.

Unable to access file descriptor record for system printer forms control definition file.

Meaning

Self-explanatory.

Action

Use the RECOPY utility to allocate more records or scratch unneeded files to get more space on the disk.

Unable to initially create system printer forms control definition file.

Meaning

Self-explanatory.

Action

Contact your field representative.

You do not have SCRATCH access rights to this file.

Meaning

You do not have SCRATCH access rights to the file you are trying to scratch.

Action

Respecify the file name or contact the system administrator.

APPENDIXES

PSPRINT UTILITY ERROR MESSAGES

You may encounter the following error messages while running the PSPRINT utility:

Error using this file for input. This file, library, and volume form an invalid path name.

Meaning
Self-explanatory.

Action
Verify and respecify the file, library, volume to form the correct path name.

Error using this file for input. This file was not found in the given library.

Meaning
Self-explanatory.

Action
Verify and respecify the file name.

Error using this file for input. This library was not found on the given volume.

Meaning
Self-explanatory.

Action
Verify and respecify the volume name.

Error using this file for output. This volume was not on this system.

Meaning
Self-explanatory.

Action
Verify and respecify the volume name.

Invalid print parameter(s), please respecify.

Meaning
Self-explanatory.

Action
Verify the flashing printer parameter and respecify.

Appendix F
LCS15 TYPOGRAPHIC FONT SAMPLES

INTRODUCTION

This appendix contains samples of text, in 12-point, of typographic fonts that are available on the LCS15 printer. For the complete character set of each font, refer to the appropriate encoding in Appendix B.

GENERATING SPECIAL CHARACTERS

The way you generate special characters in the WISCII encoding, such as β or §, depends upon which word processing application you are using. If you are running WP Plus, use the DEAD key or the SHIFT and DEAD keys followed by the appropriate character. Refer to the *WP Plus Reference Manual* for more information. If you are running WP, use the Special Characters glossary, Library Number GEN-019-11-80, available through the International Society of Wang Users (ISWU).

TYPOGRAPHIC FONT SAMPLES

The following samples contain the keyboard characters and a sample sentence that shows how characters appear in a font. Notice how different fonts and the addition of the bold attribute can affect the amount of space allotted in proportional spacing.

Times Roman

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Times Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345678
90!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Times Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$
%¢&()-=+'";:?/,.*
The quick brown fox jumped over the lazy dog's back.

Times Bold Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!
@#$%¢&()-=+'";:?/,.*
The quick brown fox jumped over the lazy dog's back.

Helvetica

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345678
90!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345
67890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345678
90!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Bold Oblique

**ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345
67890!@#$%¢&*()-=+'";:?/,.**
The quick brown fox jumped over the lazy dog's back.

Courier

```
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.
```

Courier Bold

```
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.
```

Courier Oblique

```
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.
```

APPENDIXES

Courier Bold Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+' ";:?/,.
The quick brown fox jumped over the lazy dog's back.

Avant Garde Gothic Book

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890l@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Avant Garde Gothic Book Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890l@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Avant Garde Gothic Demi

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890l@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Avant Garde Gothic Demi Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890l@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Palatino Roman

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Palatino Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345
67890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Palatino Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!
@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Palatino Bold Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567
890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

New Century Schoolbook Roman

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234
567890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

New Century Schoolbook Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxy z1234567890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

New Century Schoolbook Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz12345 67890!@#$%¢&()-=+'";:?/,.*
The quick brown fox jumped over the lazy dog's back.

New Century Schoolbook Bold Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz 1234567890!@#$%¢&*()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Narrow

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*()-=
+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Narrow Bold

**ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*
()-=+'";:?/,.**
The quick brown fox jumped over the lazy dog's back.

Helvetica Narrow Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*()-=
+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Helvetica Narrow Bold Oblique

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*
()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Zapf Chancery Medium Italic

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz1234567890!@#$%¢&*
()-=+'";:?/,.
The quick brown fox jumped over the lazy dog's back.

Zapf Dingbats

✿✛✜✚✦✦✧★☆⊙☆✿★★★☆❊✳✲✱✳✴✵✶✷❋✪✪✵✷❂✶✵✸✹✺✹●○■❏▢❐▢▲
▼◆❖►▌▐∝∞✓✔✗✘✕✖✚✎✐✌✎✍✁✃☎☏✆✇☞✜✗✉✐✙✚✛✤✥✦

APPENDIXES

Printing Zapf Dingbat Characters

The following list shows you which keyboard characters correspond to the Zapf Dingbat characters. To print a Zapf Dingbat character, press the key on the keyboard that matches the Zapf Dingbat character you want and apply the Zapf Dingbat font to it.

A = ✿	a = ❂	1 = ☜	: = ♣
B = ✛	b = ❍	2 = ☞	? = ♠
C = ✜	c = ✱	3 = ✓	/ = ▣
D = ✣	d = ✲	4 = ✔	, = ♂
E = ✤	e = ✳	5 = ✕	. = ✎
F = ✦	f = ✴	6 = ✖	
G = ✧	g = ✵	7 = ✗	
H = ★	h = ✶	8 = ✘	
I = ☆	i = ✷	9 = ✚	
J = ✪	j = ✸	0 = ✏	
K = ✫	k = ✹	! = ☞	
L = ✬	l = ●	@ = ⌨	
M = ★	m = ○	# = ☛	
N = ✭	n = ■	$ = ✄	
O = ✮	o = ❑	% = ☎	
P = ✯	p = ❏	¢ = N/A	
Q = ✺	q = ❐	& = ✆	
R = ✰	r = ❒	* = ☛	
S = ✼	s = ▲	(= ✈	
T = ✽	t = ▼	) = ✉	
U = ✾	u = ◆	- = ✍	
V = ✳	v = ❖	= = ✝	
W = ✿	w = ❱	+ = ☞	
X = ❀	x = ❘	' = ✐	
Y = ❁	y = ❙	" = ✂	
Z = ❃	z = ❚	; = ✙	

You can also use the encodings in Appendix B to determine which characters to use to generate a Zapf Dingbat character. Refer to the WISCII encoding of the Courier, Times, Helvetica, and Helvetica Narrow font families and the Zapf Dingbat encoding in Appendix B. Determine the hexadecimal code of the Zapf Dingbat character you want to generate and then see which character corresponds to it in the WISCII encoding. Enter the WISCII encoded character and then apply the Zapf Dingbat font to it.

When you send the document to the LCS15 printer, it prints the appropriate Zapf Dingbat character. For example, the hexadecimal code of the Zapf Dingbat character β is EE. In the WISCII encoding, EE corresponds to the character β. To generate β, enter β and apply the Zapf Dingbat font to it.

Symbols Set

ABXΔΕΦΓΗΙϑΚΛΜΝΟΠΘΡΣΤΥςΩΞΨΖαβχδεφγηιφκλμνοπθρστυϖω ξψζ1234567890!≅#∃% &*()-=+∍∀;:?/,.

Printing Symbols Set Characters

The following list shows you which keyboard characters correspond to the Symbols Set characters. To print a Symbols Set character, press the key on the keyboard that matches the Symbols Set character you want and apply the Zapf Dingbat font to it.

A = A	a = α	1 = 1	: = :
B = B	b = β	2 = 2	? = ?
C = X	c = χ	3 = 3	/ = /
D = Δ	d = δ	4 = 4	, = ,
E = E	e = ε	5 = 5	. = .
F = Φ	f = φ	6 = 6	
G = Γ	g = γ	7 = 7	
H = H	h = η	8 = 8	
I = I	i = ι	9 = 9	
J = ϑ	j = φ	0 = 0	
K = K	k = κ	! = !	
L = Λ	l = λ	@ = ≅	
M = M	m = μ	# = #	
N = N	n = ν	$ = ∃	
O = O	o = o	% = %	
P = Π	p = π	¢ = N/A	
Q = Θ	q = θ	& = &	
R = P	r = ρ	* = *	
S = Σ	s = σ	(= (	
T = T	t = τ	) =)	
U = Y	u = υ	- = -	
V = ς	v = ϖ	= = =	
W = Ω	w = ω	+ = +	
X = Ξ	x = ξ	' = ∍	
Y = Ψ	y = ψ	" = ∀	
Z = Z	z = ζ	; = ;	

You can also use the encodings in Appendix B to determine which characters to use to generate a Symbols Set character. Refer to the WISCII encoding of the Courier, Times, Helvetica, and Helvetica Narrow font families and the Symbols Set encoding in Appendix B. Determine the hexadecimal code of the Symbols Set character you want to generate and then see which character corresponds to it in the WISCII encoding. Enter the WISCII encoded character and then apply the Symbols Set font to it.

APPENDIXES

When you send the document to the LCS15 printer, it prints the appropriate Symbols Set character. For example, the hexadecimal code of the Symbols Set character β is EE. In the WISCII encoding, EE corresponds to the character β. To generate β, enter β and apply the Symbols Set font to it.

In-line Set

∇η Ψ Φ ÷ □ Λ ‖ } ∫ ∕ Ω ∂ ~ ↑ ℓ Γ Θ Σ ™ Ξ ∝ Δ ∞ Υ ≈ α φ ψ φ ε ↔ λ η ∫ κ ω μ ν ↓ ρ γ θ σ τ ξ † δ χ υ ζ 1234567890 √ ≡ ← →
± { Σ ®) L – © \ ↑ • ↕ ¬ ↵ ← ∆ ⋯

Printing In-line Set Characters

The following list shows you which keyboard characters correspond to the In-line Set characters. To print an In-line Set character, press the key on the keyboard that matches the In-line Set character you want and apply the Zapf Dingbat font to it.

A = ∇	O = ↑	c = ψ	q = γ	5 = ₅	(= }
B = η	P = ℓ	d = φ	r = θ	6 = ₆	) = L
C = Ψ	Q = Γ	e = ε	s = σ	7 = ₇	- = –
D = Φ	R = Θ	f = ↔	t = τ	8 = ₈	= = ©
E = ÷	S = Σ	g = λ	u = ξ	9 = ₉	+ = ∖
F = □	T = ™	h = η	v = †	0 = ₀	' = Γ
G = Λ	U = Ξ	i = ι	w = δ	! = √	" = •
H = ‖	V = ∝	j = ∫	x = χ	@ = ≡	; = ↕
I = }	W = Δ	k = κ	y = υ	# = ←	: = ⁻
J = ∫	X = ∞	l = ω	z = ζ	$ = →	? = ∫
K = ∕	Y = Υ	m = μ	1 = ι	% = ±	/ = ↤
L = Ω	Z = ≈	n = ν	2 = ₂	¢ = {	, = ∆
M = ∂	a = α	o = ↓	3 = ₃	& = Σ	. = ⋯
N = ~	b = φ	p = ρ	4 = ₄	* = ®	

You can also use the encodings in Appendix B to determine which characters to use to generate a Symbols Set character. Refer to the WISCII encoding of the Courier, Times, Helvetica, and Helvetica Narrow font families and the In-line Set encoding in Appendix B. Determine the hexadecimal code of the In-line Set character you want to generate and then see which character corresponds to it in the WISCII encoding. Enter the WISCII encoded character and then apply the In-line Set font to it.

When you send the document to the LCS15, it prints the appropriate In-line Set character. For example, the hexadecimal code of the In-line Set character β is EE. In the WISCII encoding, EE corresponds to the character β. To generate β, enter β and apply the In-line Set font to it.

Appendix G
WANG PRINTERS AND ACCESSORIES

INTRODUCTION

Wang supports four types of printers: line, daisy, matrix, and laser. Appendix G contains tables that list the printer model numbers and the applications and features that each printer supports. This appendix also lists the accessories that are available for these printers.

WANG PRINTERS

The following tables list the applications and features that are supported by Wang printers.

Table G-1. Applications and Features Supported on Line Printers

Model Number	WP Plus	VS/IIS OIS WP	VS DP	Graphics[a]	WIIS	Loadable Fonts
5570			Yes			
5571			Yes			
5574		Yes	Yes			
5574-1	Yes	Yes	Yes			
7574-1T	Yes	Yes	Yes			
5573			Yes			
5575			Yes			

[a] Unless noted otherwise, graphics prints the following files: Lotus Spreadsheets, VS 20/20 Spreadsheets, CHARTER graphics, MS Chart, VSGF, and Wang VDM.

APPENDIXES

Table G-2. Applications and Features Supported on Matrix Printer

Model Number	WP Plus	VS/IIS OIS WP	VS DP	Graphics[a]	WIIS	Loadable Fonts
5577	Yes	Yes	Yes	Yes		Yes
5578	Yes	Yes	Yes	Yes		Yes
5521		Yes	Yes			
5521I		Yes	Yes			
5521W		Yes	Yes			
5531-2		Yes	Yes			
5531W		Yes	Yes			
5533		Yes	Yes			
5535		Yes	Yes			
5535-1		Yes	Yes			
VS-PM017			Yes			
VS-PM019	Yes	Yes	Yes			
LM400	Yes	Yes	Yes	Yes		Yes
LM700	Yes	Yes	Yes	Yes		Yes
LM900	Yes	Yes	Yes	Yes		Yes

[a] Unless noted otherwise, graphics prints the following files: Lotus Spreadsheets, VS 20/20 Spreadsheets, CHARTER graphics, MS Chart, VSGF, and Wang VDM.

Table G-3. Applications and Features Supported on Daisy Printers

Model Number	WP Plus	VS/IIS OIS WP	VS DP	Graphics[a]	WIIS	Loadable Fonts
5581WD		Yes				
6581W		Yes	Yes			
6581W-1	Yes	Yes	Yes			
6581WC		Yes	Yes			
6581WC-1	Yes	Yes	Yes			
7582T		Yes	Yes			
7582W-1T	Yes	Yes	Yes			
7581WC-1T	Yes	Yes	Yes			
DW-20	Yes	Yes	Yes			
DW/OS-55	Yes	Yes	Yes			
75DW/OS-55T	Yes	Yes	Yes			
DW/OS-60	Yes	Yes	Yes			
DW/OS-60T	Yes	Yes	Yes			
OIS-PM015	Yes	Yes				
VS-PM015	Yes	Yes	Yes			
OIS-PTR-20	Yes	Yes				
T400		Yes				

[a] Unless noted otherwise, graphics prints the following files: Lotus Spreadsheets, VS 20/20 Spreadsheets, CHARTER graphics, MS Chart, VSGF, and Wang VDM.

APPENDIXES

Table G-4. Applications and Features Supported on Laser Printers

Model Number	WP Plus	VS/IIS OIS WP	VS DP	Graphics[a]	WIIS	Loadable Fonts
LPS8	Yes	Yes	Yes			Yes
LPS-12	Yes	Yes				Yes
LIS-12[b]	Yes	Yes	Yes	Yes	Yes	Yes
75LIS-12T[b]	Yes	Yes	Yes	Yes	Yes	Yes
75LIS-12VT[b]	Yes	Yes	Yes	Yes	Yes	Yes
LIS-24[b]	Yes	Yes	Yes	Yes	Yes	Yes
LCS15-SYS	Yes	Yes	Yes	Yes	Yes	Yes
LCS15-SYS-T	Yes	Yes	Yes	Yes	Yes	Yes
LDP8-SYS	Yes	Yes	Yes			Yes
IP41D		Yes				

[a] Unless noted otherwise, graphics prints the following files: Lotus Spreadsheets, VS 20/20 Spreadsheets, CHARTER graphics, MS Chart, VSGF, and Wang VDM.

[b] Supports PIC Image printing.

PRINTER ACCESSORIES

The following list contains the accessories that are available for Wang printers.
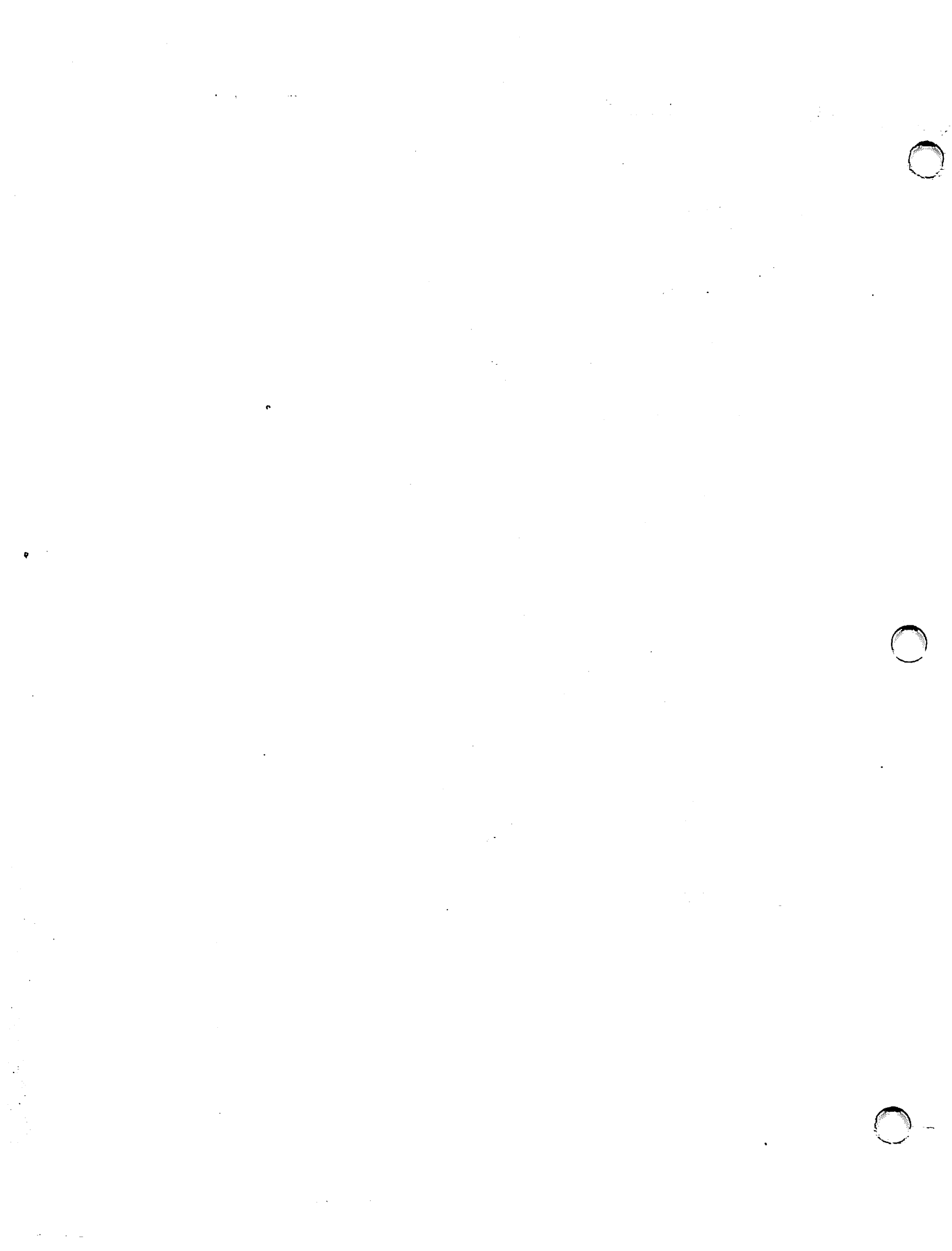
For Daisy Printers

- Twin sheet feeder TSF-31 for the 6581W-1, and DW/OS-20
- Twin sheet feeder TSF-41 for the 6581WC-1
- Mono-directional forms tractor FT-1 for the 6581W-1
- Bidirectional forms tractor BFT-1 for the 6581W-1
- Bidirectional forms tractor BFT-2 for the 6581WC-1
- Envelope feeder for the 6581W-1
- Mono-directional forms tractor FT-2 for the DW/OS-20
- Dual sheet feeder DSF-55 for the DW/OS-55
- Envelope tray ET-1 for the DSF-55
- Bidirectional forms tractor BFT-55 for the DW/OS-55
- Dual sheet feeder with envelope DSF-60 for the DW/OS-60
- One bin feeder SDF-40 for the PM015
- Forms tractor FT-40 for the PM015

For Matrix Printers

- Twin sheet feeder TSF-61 for the 5577
- Dual sheet feeder DSF-77 for the 5577
- Envelope tray ET-1 for the DSF-77
- Bidirectional forms tractor BFT-1 for the 5577
- Mono-directional forms tractor FT-1 for the 5577
- Single sheet feeder SSF-PM019 for the PM019
- Unidirectional forms tractor FT-PM019
- Bidirectional forms tractor BFT-PM019 for the PM019
- Dual sheet feeder with envelope DSF-60M for the 5578
- Forms Tractor FT-4OM for the 5578

For Laser Printer

- Dual sheet feeder DSF-8 for the LPS8

WANG

Customer Comment Form

Publication Number _____ 715-1923

Title _____ **VS/OIS PRINTER SERVICES REFERENCE GUIDE**

Help Us Help You . . .

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☐ Enclosed with equipment   _____

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☐ Self-study text   ☐ Other _____
_____

Please rate the quality of this publication in each of the following areas.

	EXCELLENT	GOOD	FAIR	POOR	VERY POOR
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Readability — Is the manual easy to read and understand?	☐	☐	☐	☐	☐
Clarity — Are the instructions easy to follow?	☐	☐	☐	☐	☐
Examples — Were they helpful, realistic? Were there enough of them?	☐	☐	☐	☐	☐
Organization — Was it logical? Was it easy to find what you needed to know?	☐	☐	☐	☐	☐
Illustrations — Were they clear and useful?	☐	☐	☐	☐	☐
Physical Attractiveness — What did you think of the printing, binding, etc?	☐	☐	☐	☐	☐

Were there any terms or concepts that were not defined properly? ☐ Y ☐ N If so, what were they? _____

After reading this document do you feel that you will be able to operate the equipment/software? ☐ Yes ☐ No
☐ Yes, with practice

What errors or faults did you find in the manual? (Please include page numbers) _____
_____
_____

Do you have any other comments or suggestions? _____
_____
_____
_____

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Dept/Mail Stop _____   State/Country _____

Company _____   Zip Code _____ Telephone _____

Thank you for your help.

WANG

Fold
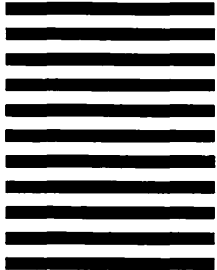
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Ordering Instructions

1. If you have purchased supplies from Wang before, and know your Customer Number, please write it here.
2. Provide appropriate Billing Address and Shipping Address.
3. Please provide a phone number and name, should it be necessary for WANG to contact you about your order.
4. Your purchase order number and date.
5. Show whether order is taxable or not.
6. If tax exempt, please provide your exemption number.
7. If you wish credit for this order to be given to a WANG salesperson, please complete.
8. Show part numbers, description and quantity for each product ordered.
9. *Pricing extensions and totaling can be completed at your option; Wang will refigure these prices and add freight on your invoice.*
10. Signature of authorized buyer and date.

Wang Terms and Conditions

1. **TAXES** — Prices are exclusive of all sales, use, and like taxes.
2. **DELIVERY** — Delivery will be F.O.B. Wang's plant. Customer will be billed for freight charges; and unless customer specifies otherwise, all shipments will go best way surface as determined by Wang. Wang shall not assume any liability in connection with the shipment nor shall the carrier be construed to be an agent of Wang. If the customer requests that Wang arrange for insurance the customer will be billed for the insurance charges.
3. **PAYMENT** — Terms are net 30 days from date of invoice. Unless otherwise stated by customer, partial shipments will generate partial invoices.
4. **PRICES** — The prices shown are subject to change without notice. Individual document prices may be found in the WangDirect Software & Literature Catalog (711-0888A)
5. **LIMITATION OF LIABILITY** — In no event shall Wang be liable for loss of data or for special, incidental or consequential damages in connection with or arising out of the use of or information contained in any manuals or documentation furnished hereunder.
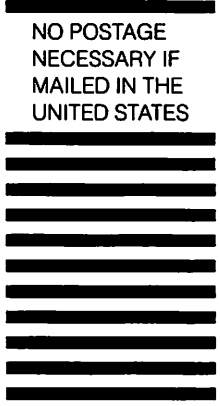
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